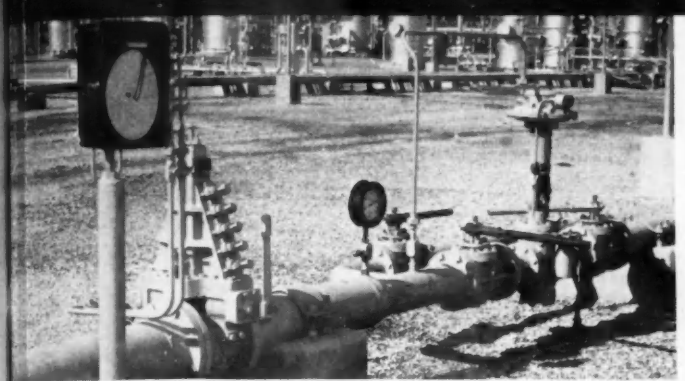
The OIL WEEKLY



EMCO Orifice Meter and Nordstrom Valves on flare line.

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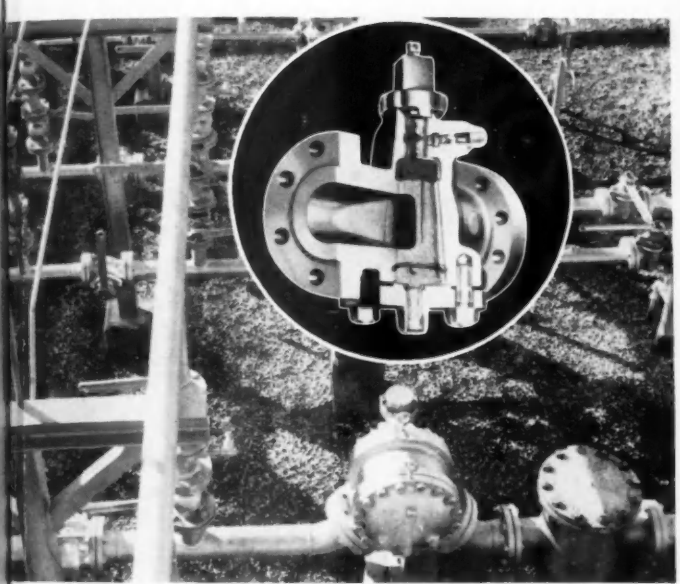
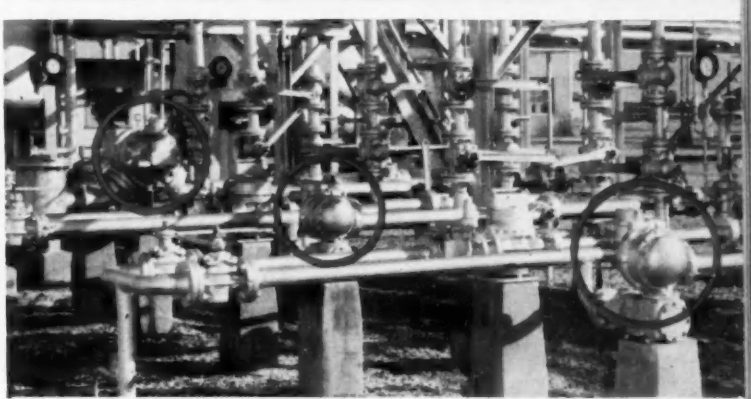
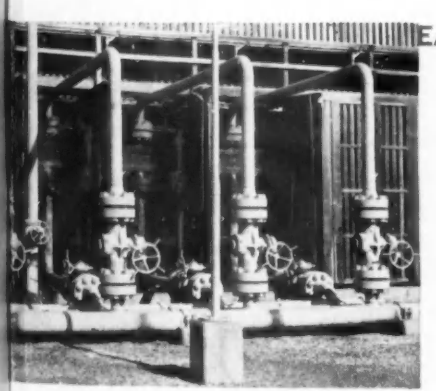


Pittsburgh Rotocycle Meter and Nordstrom Valves on meter lines.



No. 2 and No. 5 Pittsburgh Rotocycle Meters at main meter station.



rdstrom Valves on high pressure cooling coils.

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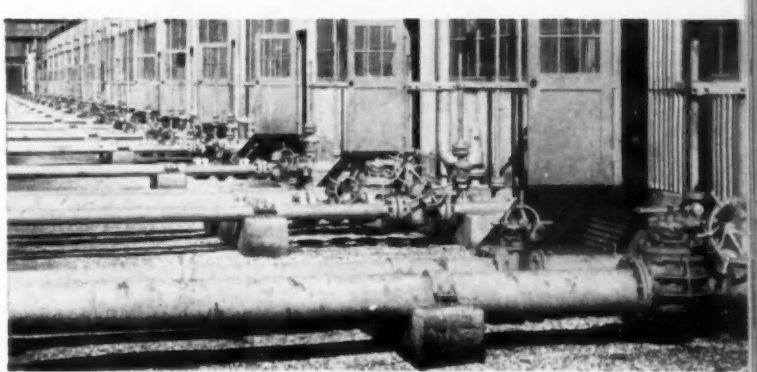

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THE OIL WEEKLY

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Published by THE GULF PUBLISHING COMPANY, Houston, Texas

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LOOKING AHEAD
... with the Editor

NOTWITHSTANDING the fact that the oil industry has repeatedly gone on record as being opposed to restrictions such as have been necessitated by the war, undoubtedly some good will come of these regulations. It is questionable whether the industry could have ever done the job asked of it without the concentration of authority that is lodged in the Petroleum Administration for War.

As permanent by-products, let us say, some valuable results have accrued both to the industry and to the government. There have been pronounced differences of opinion about some of the restrictions, but these have been resolved to the mutual satisfaction of the industry and the government, and a lasting example of cooperation for a worthwhile cause has been established, proving that industry and government can work together effectively.

The industry can be proud of its record in this war. Other industries might well emulate the oil industry in the steadfastness with which it has functioned.

Judging from its past history, the oil industry is also broad minded enough to take hold of those features that have proved beneficial through government participation, and utilize them.

Dudley Cornell, district counsel, Petroleum Administration for War, of Houston, reviews the permanent benefits likely to grow from wartime regulation and activities of the industry, in an article to appear soon.

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The Changing Panorama

Circuit Court Remarks About Drilling Cost Deductions Mean Life or Death to Industry

MUCH alarm is being expressed following a recent decision of the Fifth United States Circuit Court of Appeals at New Orleans, in which the court saw fit to remark that deduction of intangible drilling costs should not be allowed under present federal income tax laws. This could become the most serious blow ever suffered by the oil industry of this country.

Oil men fear the ruling will cause the Internal Revenue Department to attempt to disallow drilling cost deductions, although this has long been the practice of the industry. The most immediate effect of such action would be an almost certain stoppage of drilling. This would soon result in a sharp decrease in the nation's ability to produce petroleum, since new wells and new fields are necessary to maintain productive capacity. A further effect would be the likelihood that many firms would face bankruptcy. Being forced to capitalize drilling expenses and endeavor to recover through depletion allowances would cost oil companies more than they could afford. In the case of more active concerns the additional taxes would run into many, many millions of dollars each a year. This would mean ruin for the majority of operators, and hence cessation of drilling activity.

Strangely enough the actual decision of the court on points pertinent to the issue would give no cause for alarm but for the fact that Judge Sibley added *obiter dictum*. In the case of F. H. E. Oil Company vs. Commissioner of Internal Revenue, the court ruled the development obligation in an assignment of an oil and gas lease was not necessarily to be construed as a part of the consideration for the lease simply because it called for development within 30 days instead of the usual year. The commissioner had attempted to rule out the charging off of intangible development costs probably on the basis of the short period before development was to begin. Judge Sibley's opinion said the 30-day clause made no difference, but went on to say that the drilling expense deductions were not legally allowable in any case. The opinion indicated that although the Revenue Commission had been allowing these deductions for more than 20 years, it was not authorized to do so by the statutes, which the Congress had re-enacted a number of times on the assumption that they were comprehensive.

Judge Waller concurred in the result of the cause itself, but did not concur in the added phrases which were necessary to the determination of the case. It is to be hoped the conclusion that development expenditures were properly capital investments was made on the theory that special circumstances and facts in this particular case justified such a decision, but oil tax attorneys are alarmed by the fact that the opinion did not recite conditions but said that drilling costs cannot be deducted.

The Fleming Oil Company's (formerly F. H. E. Oil Company), attorney, Harry Weeks, will file motion for rehearing and the company will await outcome of this move before deciding to carry the matter to a higher court.

The important question now is what will be the reaction of the Internal Revenue Commission, Whether or not the commission will seek to collect income taxes without allowing deduction of drilling costs could well mean life or death to the industry. In the very nature of things oil companies must expend huge sums of money for exploration and development before beginning to get a return on their outlay. If they are to be taxed on this expense they cannot survive.

Walkie-Talkie in The Postwar Era

THE use of radio in the oil industry after the war as discussed by F. W. Littell in this issue, suggests vast changes in communcation methods of utmost importance.

If the Federal Communications Commission can solve the problem of frequency allocations, we may see the telephone become obsolete, and every keyman in the production and operational end of the oil business may have his walkie-talkie set.

A report from the FCC hints at what may be the future development: "The development of light-weight portable short-range radio communications equipment of the "walkie-talkie" type has opened the door to a large variety of new private applications of radio. The success of such communications on the battlefront has been followed by many suggestions for peacetime use of low-power portable transceivers in the cities, on the highways, and in rural areas. To make possible the fullest practicable development of private radio communications within the limits set by other demands for assignments in the spectrum, the commission on its own motion proposes to allocate the band from 460 to 470 Mc. to a new "citizens radio-communication service".

"The possible uses of this service are as broad as the imagination of the public and the ingenuity of equipment manufacturers can device."

"Pony" Continues To Do a Good Job

THAT many of the ex-oilmen now in the military services maintain a keen interest in what is going on in the industry is emphasized by letters thanking THE OIL WEEKLY for its Pony Edition, sent free to overseas fighting men formerly with oil companies. These service men unanimously show themselves eager to keep up with back home developments and their words of appreciation for the Pony show how grateful they are for any information about their line of work.

Captain Thomas B. Campbell from Headquarters, 3rd. Corps Artillery, somewhere in Europe writes: "Prior to entering the Army I was a production engineer for The Cities Service Oil Company, at Russell, Kansas. A lot of contact has been lost in the past three years but the desire to get back in the business grows every day. Your Pony Edition is the biggest aid we have been offered to keep us from coming back completely void of knowledge of current activities."

Private First Class Nelson R. Thomas with the 425th. A.S.F. Band, also in Europe, says: "It certainly builds my morale to hear what's 'cooking' back in the fields. I want to thank you for a very swell paper."

From somewhere in the Pacific, a Navy man, Jeff A. Bunton, who was with Schlumberger a few years ago, writes: "I never dreamed I would be keeping up with drilling and production

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after entering the Navy. But I have really kept up with the oil news since I began to receive the Pony Edition."

All of which makes us humbly thankful that through our small efforts so much is brought to those service men who were once and we sincerely trust will soon again be a part of the oil industry.

Trade Accords Seen As Distinct Danger

CARTELIZATION of world trade under so-called international "trade accords" is the greatest danger now threatening economic progress in America, J. Howard Pew, president of Sun Oil Company, warned in connection with his company's annual report.

"This means, of course, cartelizing American domestic activities as well as international trade, for the two cannot be separated into isolated compartments," Pew said. "Moreover, the only difference between cartels among private enterprises and cartels controlled by government is that the latter are more reprehensible. This whole subject is fast becoming the most challenging issue ever to confront the American people."

Spirited competition prepared the petroleum industry for the demands of war, he asserted, and "only through the operation of free enterprise will the industry be able to meet the increased demands which surely will be made upon it until this war ends."

Pew cited the Anglo-American petroleum agreement, proposed last summer, as an example of the type of trade accord which would destroy free enterprise.

"The same stifling of competitive and economic opportunity that was present in the old NRA codes now reappear in the guise of an international trade accord—a super-state cartel—an international monopoly under the control of governments," he said.

Pew recalled that the nation's top oil executives were compelled for many months to devote a large amount of their time and energy to discussions of the proposed treaty, when they should have concentrated on the production of war materials.

☆

One of our subscribers writes us that in his issue of THE OIL WEEKLY *last week there was a man's watch. The purpose of this notice is to advise our readers that the publication has not established a new policy of adding to the already superlative value of* THE OIL WEEKLY *by inserting watches even in occasional copies!*

Questioning That Japanese Tunnel

NEW world war maps just issued by Standard Oil Company (New Jersey) indicate tunnels under construction between Shimonoseki in Japan, and Fusan in Korea. The rumors have been out for some time, but there seem to be a number of "doubting Thomases" among mining engineers. At least one, viewing the problem from a high point in Bolivia—La Paz to be exact—Christian S. Anderson, says, in a letter in the March issue of *Mining And Metallurgy*, "the story could be taken with all the salt of the Pacific Ocean and still be impossible to swallow.

"The time factor," he continues, "is enough to assure us that such a 100-mile underwater tunnel is neither finished nor being rushed to completion. But the Japanese also lack the requisite experienced organization and engineers for such an undertaking. As a Japanese, who ought to know, once remarked to me: 'Japanese engineers make too many mistakes'."

Frank Phillips' Tax And a Salary Choice

THERE is nothing humorous, although some seem to find it, in the statement last week of Frank Phillips, chairman of the board of Phillips Petroleum Company, that he had asked his board of directors to reduce his salary from $50,000 to $1 per annum. Phillips said that, due to his other income, taxes on his $50,000 salary took all of it but about $390, so he felt he might as well work for a dollar a year. Of course the reduction of his salary to one dollar will mean that Phillips Petroleum will have to pay an increased income tax which will take up most of the $50,000, but Frank Phillips won't have to worry about the tax and he will be just that much farther down the line in the list of hated economic royalists. (The degree of nobility in the ranks of the economic royalists seems to be determined by the amount of income.)

The lesson from the condition in which Frank Phillips finds himself is plain: The incentive to work is steadily being reduced by the unsound tax program followed by the government. Frank Phillips probably will go ahead and do his work as board chairman of Phillips in his usually efficient manner because he receives a substantial income from company profits, but if that were not the case, Phillips Petroleum Company, and Phillips Petroleum Company employes, its stockholders and the public at large would be adversely affected by his proposal for a voluntary reduction in salary.

We have wondered if "the powers that be" (and God only knows just who they are and how great their individual influences) are actually operating on the basis of an effort to destroy individual initiative, or if they are simply dumb. In any event the results are likely to be the same.

In time of war we think that every American should want to contribute all he can to the war effort, but we hold that our government has an obligation to spend the money wisely and not to waste it. But when the war is over the "powers that be" will find a decided unwillingness on the part of many to work and plan if the profits from those endeavors are used in fantastic schemes, particularly in schemes which may involve pay for idleness.

Expanding Market For Gas Urged

THAT present and future requirements of petroleum and natural gas for chemical uses are negligible, was revealed in a report submitted at the winter quarterly meeting of the Interstate Oil Compact Commission.

The compact's regulatory practices committee, composed of regulatory officials of the producing states filed a report showing the consumption of natural gas for 1943 as follows:

Field consumption 20.8 percent; domestic use 14.6 percent; Commercial use 5.8 percent; carbon black manufacture 8.7 percent; petroleum refineries 7.4 percent; electric plants 8.3 percent; cement industry 1.4 percent; and other industrial uses 33 percent.

The report showed that for 1944 the chemical industry consumed less than 1 percent by weight of all petroleum and natural gas produced for the year, and that the expanded use of gas as a raw material for chemical product will not, in the immediate future, consume an appreciable portion of natural gas production.

Declaring that major gas fields "on the present market outlet, will extend over a period of years so great that it may overlap into an era where gas ceases to hold its present rank as a super-fuel," the committee found that, because of its abundance, gas was selling at the wellhead at below its intrinsic value and recommended expanding competitive markets and resulting better prices to encourage and promote utilization and conservation of natural gas.

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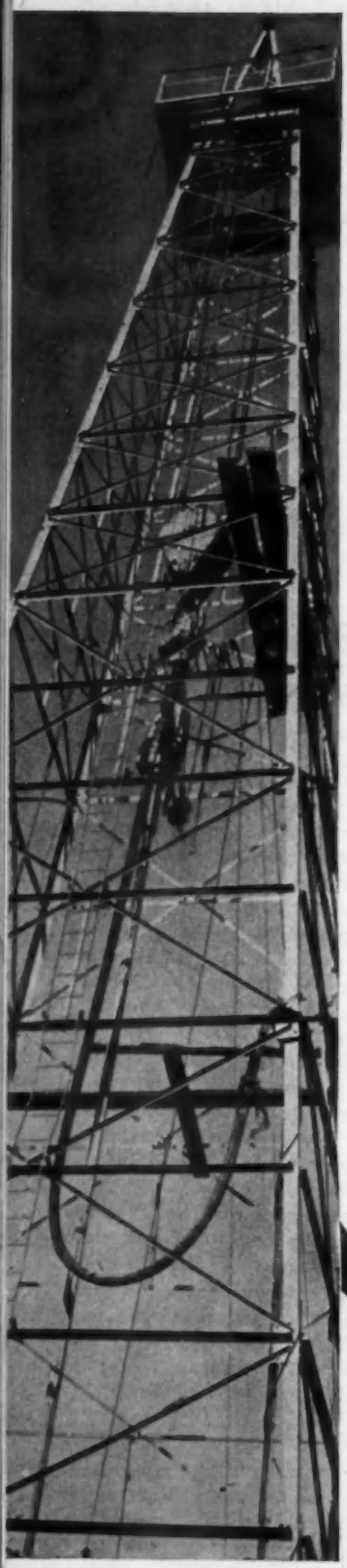

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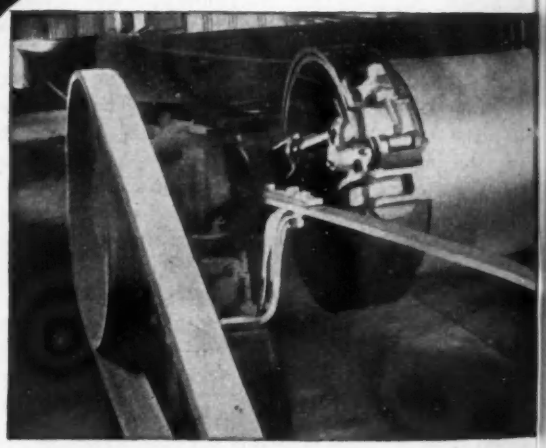

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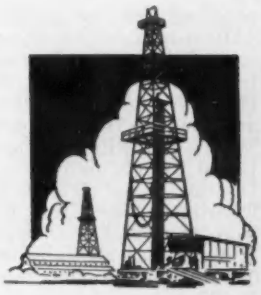

By BERTRAM F. LINZ, Washington Correspondent

SENATE impatience with the Canol project brought from the War Department last week an agreement to close it down, not on June 30 as originally planned, but on April 2, but the abandonment of the project will not necessarily mean abandonment of investigation and it may well be that a full-dress probe of the whole scheme, the men behind it, the contractors who carried it out and the agreement with the Canadian government and Imperial Oil Company may still be conducted.

PIWC Warns About Draft—Another important development in the week's oil news was the warning by the Petroleum Industry War Council, at its bi-monthly meeting, that the drafting of 70 percent of the young men still left to the industry may leave the military short of needed oil. Draft exceptions are being made for some industries.

Congress Handling Tidelands—Ownership of tidelands continued to be a live subject, kept stirred up by the introduction of a number of measures in Congress foregoing all federal claims on the offshore lands and declaring them unequivocally the property of the coastal states.

Oil Price Policy Attacked—OPA pricing policy was brought under attack before a Senate committee studying extension of the price control act, due to expire June 30, to December 31, 1946, and it was charged that the agency's consistent refusal to grant an over-all crude price increase is becoming an increasingly important factor in the problem of oiling the war.

Texas Oil to California—Plans for upping the movement of West Texas crude to California to an eventual figure of 42,000 barrels daily were disclosed by PAW.

PAW Points to Effect on Oil Supply In Discussion of 18-30 Class Draft

Manpower and materials problems monopolized most of the time of the bi-monthly meeting of the Petroleum Industry War Council March 14, the importance of other difficulties being minimized by the threatened loss of a large percentage of the men engaged in production and in the new war-born branches of the industry such as synthetic rubber components and 100-octane gasoline.

The manpower question was the most important of three subjects on which the council took formal action, adopting a resolution outlining the situation and urging Administrator Ickes to go over the head of Selective Service officials to War Mobilization Director James F. Byrnes to obtain protective action.

"All branches of the industry are now undermanned," the resolution pointed out, "and the demand is increasing for natural gas, crude oil and products including 100-octane number aviation gasoline, blending agents for 100-octane number aviation gasoline, isobutane, toluene, butadiene, petroleum synthetics, other aviation gasolines and base stocks, aviation and heavy duty military lubricants, diesel lubricants and other specified materials.

"Further loss of technical men in the oil industry and particularly those employed in the complicated operations of a modern refinery, will increase the hazard and jeopardize all operations of the industry."

Prosecution of the selective service program to draft 70 percent of the men in the 18-30 age group, the council warned, "will result in substantial loss in the production of crude oil, natural gas and natural gasoline and of refined petroleum products and this loss will make it impossible for the industry to meet fully its projected commitments for war products and essential civilian needs."

The council discussed the Anglo-American petroleum agreement only briefly, receiving a report on the recent conference with members of the Senate Foreign Relations Committe. There was no action on the tidelands situation raised by the threatened issuance of prospecting permits and leases on the California off-shore lands by the Interior Department, it being felt that the matter was in very capable hands in Congress.

New levels of crude production will be required and refiners will have to run to maximum capacity throughout the year if both the European and Pacific phases of the war continue throughout 1945, but these maximum levels of operation cannot be realized if the proposed drafts on manpower are applied to the industry or adequate supplies of material are not made available, the council was warned in the report of its committee on petroleum economics.

The committee report was confined to an analysis of a study covering the last ten months of this year, based on the assumption that the European war will continue. Another similar review will be made in June.

That analysis showed that regardless of the time of termination of the European war, distillate feed stock requirements for catalytic cracking facilities will continue to increase and the industry will face a serious problem in producing and storing enough kerosine and heating oil during the summer to insure adequte supplies next winter, the committee said.

The heavy fuel oil situation appears in balance for the northeastern part of the country, and somewhat better than that should additional tanker transportation be available later in the year, but Gulf Coast stocks are foreseen building up to burdensome levels during the second half, indicating 13,100,000 barrels at the end of the third quarter and 13,600,000 barrels at the end of the year. Operating difficulties, the report said, may be expected at individual refineries when fuel oil stocks in that district approach 12 million barrels.

Transportation Remains Tight

The committee commented that despite the unusually cold winter, consumers have experienced less inconvenience than during severe weather of two years ago. This was due to the relatively higher inventories of last fall, the higher refining rates established and the release by the military of both tanker transportation and of approximately 1,200,000 barrels of distillate fuel oil suitable for home heating.

Now, however, transportation still remains tight over-all, and the transportation and products loaned by the military will have to be repaid to build back military stockpiles. Major need is for more tankers for movement of products between Districts 3 and 1 and for more tank cars for intra-district movement, it was stated.

The report showed that the tank car movement to District 1 is to range from 519,000 to 548,000 barrels daily with 531,000 barrels daily scheduled for this month. The Big Inch line is to move 318,000 barrels daily of crude, and the Little Big Inch is scheduled to move

gasoline exclusively at a daily rate of 220,000 barrels. Intracoastal barges and cross-gulf tankers, including those delivering to the East Coast south of Hatteras, are scheduled to deliver an average of 192,000 barrels daily, and Mississippi River barges are to deliver 13,000 barrels daily from District 3 to District 1 and 122,000 barrels daily to District 2. The Great Lakes movement from District 2 to District 1 is scheduled at 39,000 barrels daily next quarter, 60,000 barrels in the third quarter and 30,000 barrels in the last quarter, and these quantities should be available at refineries and terminals on the Great Lakes provided 80-octane all-purpose gasoline and other military products are handled on the lakes and via the New York barge control.

Estimates of Demand

On the basis of the factors considered, the study indicated a total demand of 5,469,000 barrels daily for the first quarter, 5,261,000 in the second quarter, 5,165,000 in the third and 5,451,000 in the final quarter, including crude, natural gasoline, benzol and condensate, an average of 5,337,000 barrels daily for the year.

Present estimates place total crude production for the year at 4,737,000 barrels daily, with natural, condensate and benzol 353,000 barrels daily, a total of 5,090,000 barrels a day against that average. Imports are placed at an average of 175,000 barrels daily for the year, with a maximum of light South American crude available and a maximum of heavy South American that can be utilized being brought into District 1 to minimize overproduction in District 3. Crude runs to stills are placed at 4,743,000 barrels daily, comparing with 4,543,000 barrels in 1944.

Average demand, production and crude runs for 1945, by districts were given in the report as follows:

District 1: Total demand, 1,904,000 barrels daily; production, crude 58,000 barrels; runs to stills, 831,000 barrels.

District 2: Total demand, 1,300,000 barrels; production, 916,000 barrels; runs to stills, 1,200,000 barrels.

District 3: Total demand, 882,000 barrels; production, 2,728,000 barrels; runs to stills, 1,723,000 barrels.

District 4: Total demand, 114,000 barrels; production, 130,000 barrels; runs to stills, 115,000 barrels.

District 5: Total demand, 1,137,000 barrels; production, 905,000 barrels; runs to stills, 874,000 barrels.

The materials situation and its effect upon necessary production was a major subject of concern to members of the council and to its production committee which, prior to the general meeting, was told by Claude P. Parsons, PAW director of materials, that the outlook "is more serious than in any previous period of the war" with every indication that it will become increasingly difficult as the war progresses in Europe and with little hope of relief until victory.

"The petroleum industry will have to meet the materials situation with the best possible brains, fortitude and facts at its disposal," Parsons said. "For several months we have been fighting a materials war of stern realities and our important problems are mostly concerned with direct competition between military requirements and petroleum requirements, both of them affecting combat."

The main reason for the present serious outlook, he explained, is the unexpected expansion of the military rocket and bomb program, throwing a greatly increased demand on the seamless and electric-weld pipe mills which produce oil company tubular goods.

However, he added, by careful review by the military of its requirements and modification of designs and reductions, the originally estimated need for 145,200 tons more tubular goods than the capacity of the mills has been reduced to 27,000 tons. That reduction means that instead of being unable to drill 3400 wells, it will be necessary to drop only 600 wells from the drilling program if the industry itself cannot supply the necessary tubular goods. But the dropping of even that number of wells, coupled with the greater threatened shortages in the third and fourth quarters, would cause a shortage of petroleum products that may seriously affect the war, he warned.

"Unless a decided change occurs in the military situation, the problem will become worse in the third and fourth quarters," Parsons told the committee, urging all operators to provide quickly the information necessary for PAW properly to press its claim for production of tubular goods.

Reviewing the situation, Parsons said tool joint deliveries from manufacturers are improving, due to the increase in production resulting from the progressive completion of an expansion program started last year and to be completely realiezd in April. This is contributing to an improvement in the drill pipe problem, with first-quarter deliveries estimated at 26,122 tons against 22,470 tons in the last quarter of 1944, although second and succeeding quarter production may be seriously affected by the situation in the seamless tube mills.

Deliveries of internal combustion engines for drilling purposes increased to 329 in January from 177 in December. Lumber, however, is becoming more critical, due to a number of factors, and other items that still cause problems are tires, tractors and trucks, also in securing certain components and alloy metals for manufacturers of petroleum equipment.

McWilliams' Report

The threatened loss of 9000 men under the new selective service drive on the 18-30 age group may make it impossible to maintain production, the committee was told by John R. McWilliams, PAW director of production, and discussion of the problem brought out the fact that such a situation would also have direct effect upon the shortage of material, since a large number of the men involved are on the casing-pulling crews and if they are taken the advantage of being able to buy a lot of good second-hand pipe will be lost.

McWilliams disclosed that PAW made an effort to have selective service revise its procedure to permit a predetermined quota of deferments for the production branch of the industry without requiring operators to submit detailed personnel lists, but without success. PAW, he said, proposes to inform selective service as to the order of importance of the duties of men in the industry, in the following order: 1, supervisors; 2, technical men (geological and seismograph); 3, drillers, derrick men and tool dressers, and 4, skilled men (electric logging, well shooting, perforating, etc.).

The production director also agreed to put into writing for further study details of the proposed central supply depots for wildcat stocks, designed to make more steel available for drilling, following a discussion at which the question was raised whether the plan would not jeopardize the wildcatting program.

About 400,000 barrels daily of production is coming from new fields and pools found since the first quarter of 1942, accounting for 40 percent of the million-barrel increase in output since Pearl Harbor, it was reported by Ralph J. Schilthuis, assistant director of the production division.

New Production

How important new production bulks in all plans for the future was demonstrated by an analysis which showed that if all drilling was stopped as of January 1, 1945, maximum efficient capacity would decrease by some 300,000 barrels daily this year and would be approximately 650,000 barrels per day less at the end of 1946 than is anticipated on the basis of the programmed and expected drilling. This reduction, it was explained, reflects simply the normal decline in output experienced from year to year in older fields and wells in the stripper and settled classifications, as well as those passing from flush to settled status.

The analysis emphasized that the necessary productive capacity can be maintained only if materials and manpower are available to complete the 27,000 new wells programmed for this year and the 30,000 which will probably be needed during 1946.

McWilliams announced that due to difficulties equipment manufacturers are experiencing in placing orders for steel and components for delivery through the remainder of the year, PAW is issuing authorizations to assist them in getting manufacturing space and the production division has agreed to make a temporary transfer of some 7600 tons of carbon and 4500 tons of alloy steel from the third quarter production operations and production MRO authorizations to class "B" (drilling and production machinery) products. Some 15,200 tons of carbon and 9200 tons of alloy steel will also have to be switched in the fourth quarter, the transfers being repaid when full allotments are received for "B" products.

Before adjourning the council adopted a resolution urging all units in the industry to cooperate with PAW when asked to provide men of training and experience for the staff, pointing out that the agency otherwise will not be able to function efficiently. The action was taken after Deputy Administrator Davies outlined the difficulties PAW is experiencing with able men unwilling to come to Washington and many who have served there anxious to return to their homes.

A third resolution, dealing with a proposal that the specifications for residual fuel oils include the explosiveness test now required by the Navy for special and Navy grade 2 fuel oils, referred the question to the technical advisory committee with request for a study and views as to the reproductibility of the test on a standardized basis.

Congressmen Race to Enact Statutes Denying Federal Claim to Tidelands

With high officials of several of the coastal states in Washington to fight the threatened attempt of the Interior Department to establish a test case for the determination of the ownership of the offshore oil lands of the Gulf and Pacific coasts, members of Congress last week began a race to enact legislation on the matter before Secretary Ickes could go ahead on pending applications for prospecting permits.

First legislation to declare title to the lands to lie in the states was introduced March 12 by Representative F. Edward Hebert of Louisiana and was referred to the House Judiciary Committee.

Hebert's measure was a joint resolution in which the federal government, in effect, surrenders for all time any claim to ownership of lands beneath tidewaters or navigable waters within the boundaries of the states.

The congressman pointed out that the original 13 states were the absolute owners of all tidewater lands when they formed the union, that the constitution has at all times required that all states thereafter admitted must be admitted upon a basis of equality with the original 13, and that for more than 100 years all courts which have passed upon the question have held that each state, upon admission, became vested with the ownership of such lands, other than any which may previously have been granted into other ownership by a sovereign having dominion over the territory thereof prior to its acquisition by the United States.

Clouded Titles Created

"During the past ten years persons have filed applications under the mineral leasing act of 1920 for prospecting permits and for oil and gas leases upon lands beneath tidewaters and lands beneath navigable waters, and have filed other applications for the location of Valentine scrip upon such lands, and have asserted in connection therewith that the United States is the owner of all such lands, thus creating clouds upon the titles of the true owners thereof," Hebert said in his resolution.

"Some of said applicants have engaged in the business of obtaining moneys from credulous investors in return for assignments of fractional interests in such applications and obtaining other moneys from the true owners, in order to clear their respective titles from such cloud.

"It is to the best interest of the people of the nation that all such clouds upon title be removed and that the opportunity for creating other similar clouds upon the titles to such lands be ended."

The legislation sets forth that "the United States of America hereby releases, remises, and quitclaims all right, title, interest, claim, or demand of the United States of America in and to all lands beneath tidewaters and all lands beneath navigable waters within the boundaries of each of the respective states, unto each of such states and unto the respective grantees or successors in interest thereof, and unto the respective present owners of such lands of which title has been conformed by official action of the United States of America."

Tidewater lands are defined in the measure as all lands permanently or periodically covered by tidal waters up to the line of mean high tide and oceanward from the coast line a distance of three geographical miles "and to the boundary line of each respective state where in any case such boundary line extends oceanward beyond three geographical miles."

Introduction of the Hebert resolution was the signal for other members of Congress to sponsor similar legislation, with Senator Pat McCarran of Nevada and Congressmen Overton Brooks of Louisiana and Clyde Doyle of California among those getting their measures in early.

Parker Succeeds Neukom

Fred L. Parker, formerly assistant to the president of Phillips and Buttorf Manufacturing Company, Nashville, Tennessee, stove manufacturers, who joined OPA in August, 1943, has been named director of the fuel and automotive rationing division, succeeding John G. Neukom, recently made director of the OPA office of board management.

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED March 17	March 10
Alabama	250	250
Arkansas	81,200	81,100
California	905,800	905,250
Colorado	10,250	10,300
Florida	20	20
Illinois	182,400	201,100
Indiana	12,300	12,500
Kansas	271,300	251,450
Kentucky	27,250	29,900
Louisiana	366,250	365,400
North Louisiana	70,650	69,800
South Louisiana	295,600	295,600
Michigan	46,300	46,800
Mississippi	51,500	50,450
Missouri	100	100
Montana	22,705	22,890
Nebraska	950	900
New Mexico	104,750	104,750
New York	12,550	12,700
Ohio	5,550	7,050
Oklahoma	368,950	369,200
Pennsylvania	33,750	33,050
Tennessee	35	35
Texas	2,159,050	2,159,050
Upper Gulf Coast	564,500	564,500
East Texas Field	381,000	381,000
Rest of Eastern Texas	146,750	146,750
Lower Gulf Coast	249,700	249,700
Southwest Texas	81,400	81,400
South Central Texas	21,000	21,000
West Texas	477,350	477,350
North Texas	149,300	149,300
Panhandle	88,050	88,050
West Virginia	7,550	8,750
Wyoming	101,850	100,450
Total United States	4,772,610	4,773,445

BUREAU OF MINES REPORT

Total stocks, foreign and domestic, March 10, as reported by the Bureau of Mines were: 218,760,000 barrels with a daily average production of 4,768,000; and runs to stills 4,770,000.

Draft Exemptions Made for Transportation Employes

Faced with the impossibility of keeping the domestic economy going if to 70 percent of the 18-30 class men were drafted out of key industries, the government's policy committee on occupational deferments has eased that rules for transportation employes and may take similar action for other workers in the near future.

The railroads will be permitted to retain 85 percent of their men, the Great Lakes carriers 90 percent and other inland water ways 80 percent. The ruling was seen as materially improving the outlook for petroleum transportation.

The committee was reported at the week end to be studying the situation in the steel industry and in coal mining. If deferments for those two industries are increased, the oil industry is seen as one of the beneficiaries through a sustained production of materials.

So far, it was learned, no definite action has been taken to place the situation of the oil industry before the committee, but PAW is gauging the effect of the 30 percent limitation on deferments with as much speed as returns from operators allow, and when the full position has been developed, it will take appropriate action.

Texas Oil Prices Upped

Price ceiling in 16 Texas fields were increased by OPA March 16 to raise their price level to that of other fields in the same general areas producing crude of like quality. New prices will be effective as from March 1.

Nine fields in what is commonly known as the Upper Gulf Coast area are given increases of 10 to 15 cents over the previous ceilings of $1.30 for 40 gravity and better from the South Esperson and Kirby fields and $1.25 for the Esperson, Fig Ridge, Batson, Oyster Bayou, Sea Breeze, South China and Willow Slough fields.

The North Sun, Sun, North Rincon, Frost, and Garcia fields in Starr County will have ceilings of $1.03 to $1.45, an increase of 10 cents. The La Belle field, Jefferson County, is given a ceiling of $1.06 to $1.48, an increase of 7½ cents, and Big Lake (Ordovician) in Reagan County is given a ceiling of 93 cents to $1.25, an increase of 13 cents.

At the same time OPA changed the name of the Sand Hills (Ordovician) pool in Crane County to Sand Hills-Ellenburger-Westfield, to conform with a recent official change in name.

Explains Plan of Moving Texas Oil to Pacific Area

Plans of PAW to increase movement of West Texas crude to California from 14,500 to a goal of 42,000 barrels daily were disclosed by Deputy Administrator Davies March 12.

The immediate objective, Davies said, is 20,000 barrels daily, but reports indicate there is sufficient additional refinery capacity on the Pacific Coast to handle 22,000 barrels more if transportation can be arranged.

The proposed movement would be in addition to the 120,000 barrels daily of products that are moved to California ports from midwestern refineries.

Moore Bitter in Criticism of Canol As Earlier Abandonment Date Is Set

The War Department is closing down its Canol operations and by early April will be entirely out of the Canadian oil business, it being forced to advance its announced closing date of June 30 by members of the Mead War Investigating Committee.

The much-publicized Alcan highway also is expected to be abandoned, marking the end of a $134 million adventure.

The last chapter of the story, yet to be revealed, will tell how the War Department plans to salvage the facilities it constructed at tremendous cost. And the suggestion already has been made that if Canada does not exercise its option to buy the refinery and pipe line —and it is not believed to want them— disposition should be taken out of the hands of the Army and turned over to the Surplus Property Board.

Members of the Senate who have consistently opposed the Canol project had a field day and were told by Senator Mead that his committee is preparing another report.

"The War Department has advised the committee that the purchase of oil has already been discontinued at the Norman Wells field," Mead said to the Senate. "It is expected that production of motor gasoline and diesel oil will continue at the refinery until about April 1 for the purpose of consuming inventories of crude oil now in storage at Whitehorse and to provide a supply of products at Whitehorse until alternate arrangements have been put into effect. About April 1, the entire refinery will have been placed on a caretaker basis.

"This will greatly facilitate the return of experienced workers to the United States. The committee understands that thorough plans are being made for the employment of these workers where they will be the most useful. The PAW already has determined that at just two domestic refineries the employment of a few hundred of the Canol personnel would result in an increased production of 100-octane gasoline of 2000 barrels per day. This compares with the production of 216 barrels per day at Canol refinery in February, 1945."

Sharpest critic of the project was Senator Edward H. Moore of Oklahoma, who charged the Canol plant has no more than "a junk value less dismantling and transportation charges" and the investment will be practically a total loss.

Moore In Bitter Criticism

"The War Department attempts to justify its bullheaded and arbitrary attitude in going ahead with this project over the advice of many oil companies and petroleum experts, and in the face of the recommendations of the Mead Committee," Moore said, "by pointing out that the project has demonstrated oil can be conveyed by pipe line over long distances and refined in year-around operations in the Arctic climate. . . . The oil companies of this country probably have a hundred laboratories at which these experiments could have been made at insignificant cost."

Moore charged that the Army, in figuring the average cost of production to be $11.15 a barrel delivered at Whitehorse failed to explain that this figure covers not only gasoline but also fuel oil and other cheap by-products.

"The purpose of the project was to produce high-octane aviation gasoline," he told the Senate. "To be honest about it, the Army must compute the cost in terms of high-octane gasoline produced. For the last half of 1944 less than 8000 barrels of aviation gasoline and only about 185,000 barrels of ordinary motor fuel were refiined. If the cost of this total production of gasoline is to be considered on the figure admitted by the Army, it will be found to be approximately $23 a barrel, excluding the value of the crude oil consumed or any allowance for amortization. If the crude consumed in the operation is charged to the refinery at $1.50 a barrel, and allowing a 20-year amortization it will boost the cost of gasoline produced for this period to more than $42 a barrel."

Demanding that the individuals "responsible for this wanton waste of public moneys" should be held responsible, Moore urged the Mead Committee to continue its investigation.

"The exact nature and character of the deal the Army seems to have made with Canada should be carefully looked into," he declared.

Says OPA Not Accepting Usual Accounting Methods

OPA policy refusing to recognize percentage depletion as an item of production cost, in which it was charged with ignoring a provision of law requiring it to accept "established accounting methods," was brought under fire by members of the Senate Banking and Currency Committee March 13 at hearings on extension of the price control act.

Their attention called to the fact that OPA denied both percentage depletion and accelerated depreciation of emergency facilities, members of the committee demanded an explanation of the agency's position and were told by G. Griffith Johnson, assistant to the deputy administrator for price, that OPA considered both to be concessions granted by Congress for income-tax purposes rather than methods on which it was to base its price adjustments.

The issue was raised by a spokesman for the coal industry, who urged inclusion in the extended law of a provision that costs determined by OPA shall include all deductions from gross income recognized by the Internal Revenue Bureau for tax purposes.

OPA has held that percentage depletion is not to be considered in the investigation of producing costs which it is about to make, but this point was not stressed by Russell B. Brown, general counsel for the Independent Petroleum Association of America when he appeared before the committee to renew the industry's demand for an over-all price increase on crude.

Brown told the committee the subsidy program was insufficient, will not serve to increase supply, which he predicted might not this year be able to maintain the 1944 record.

The IPAA representative also charged OPA with ignoring the mandate of the law for acceptance of established accounting practices, in its refusal to recognize replacement costs in crude production.

Specifically, he charged, OPA and Office of Economic Stabilization authorities are impeding the maximum needed supply of oil by:

1. Maintaining crude petroleum price ceilings below a generally fair and equitable level;

2. Discriminating against the crude producing industry, particularly the independents;

3. Fostering and encouraging monopoly by maintaining a situation in petroleum prices favorable to a few large companies and detrimental to thousands of independent oil producers;

4. Contending that the crude industry must use 1936-39 as a representative peacetime level as a standard below which current earnings in that industry must fall before upward revision in price ceilings could be allowed; and,

5. Under price control the Price Administration permitted the price of petroleum products to rise in 1941 and prevented crude prices from rising and then froze crude prices at a depressed level.

"The effect of the administration of the price control law is the liquidation of the independent petroleum producer," he charged.

Forecasting stiffer oil rationing, Brown told the committee "the OPA, through all its utterances on the subject, has always appeared to be serene in its outlook on petroleum supply; other agencies of government have not shared that complacency."

Questionnaire Delayed as Refiners Discuss Costs

Representative refiners met with OPA officials March 15 to discuss the proposed investigation of refining costs suggested by the House Small Business Committee, which is to supplement study on the cost of producing crude oil.

Unlike the meeting some weeks ago at which a procedure for the crude cost survey was worked out, OPA went into the meeting with no ideas what the refiners would want and left it up to the industry committee to develop not only the manner in which the study would be made but also the ground to be covered.

Meanwhile, it became apparent that more time will elapse before a questionnaire on crude costs is ready for distribution to the selected sample group whose costs will form the basis of any OPA determination of the adequacy of present prices.

The form has been approved by the various individuals and organizations but the overloaded Government Printing office will delay its actual production.

Senate Extends Authority Of RFC for Oil Subsidies

Legislation extending the authority of the Reconstruction Finance Corporation to make subsidy payments on petroleum and other commodities until June 30, 1946, was passed by the Senate March 15 and sent to the House of Representatives. The bill provides for subsidy payments on petroleum not exceeding $290 million.

Production Companies and Commission To Offer Bill Regulating Texas Gas

Complete revision of the gas conservation law is provided in a new bill which will be offered in the Texas House of Representatives on April 3. The bill will be presented as a substitute for several bills which already have been introduced and will be proposed at a hearing before the House Committee on Oil, Gas and Mining.

Some 20 oil company attorneys have approved the measure as has the Texas Railroad Commission. Thus it will be offered as a departmental bill with industry support.

"The proposed substitute," said Commission Chairman Olin Culberson, "appears adequate to meet suggestions made by the commission as to points on which legislation is needed. It would strengthen the Texas market demand statute in natural gas, provide ratable taking, tend to discourage flaring of gas by giving consideration to this type of gas in market demand, enlarge commission powers controlling recycling and repressuring, define certain terms more clearly, and authorize voluntary pooling agreements."

Culberson declared that the bill, if it becomes law, would do much to eliminate the waste of gas in Texas.

Commissioners Thompson and Jester approved the bill likewise, but Thompson thought there should be added a provision that gas may be taken from one sand or one field to another if used to increase oil recovery. This is embodied in the bill as reviewed below.

The bill would be an amendment to Section 2, Article 6008, of the Revised Civil Statutes of 1925. The first revision is in Paragraph (d), the definition of a "gas well," which would read as follows:

"(d) The term 'gas well' shall mean any well from which all hydrocarbons produced were *at the time of the discovery of the pool* in the gaseous phase in the reservoir.

"(e) The term 'oil well' shall mean any well which produces liquid hydrocarbons which were at the time of the discovery of the pool in the liquid phase in the reservoir; provided that if the quantity under ordinary well producing methods shall be less than one barrel per 100,000 cubic feet of gas produced therefrom, the well shall be deemed to be a 'gas well.'"

The old definition was more complicated, but not so clear.

Condensate Added

To cover condensate, an entire new paragraph (1) has been added at the end of this section. It reads as follows:

"(1) The term 'condensate' shall mean hydrocarbons existing in the gaseous phase in the reservoir at the time of its discovery and condensed to a liquid at pressures of temperatures below those of the reservoir and produced as a liquid at the well under ordinary well producing methods. The term 'oil,' 'crude oil,' 'crude petroleum' and 'crude petroleum oil', as used in this Title 102, shall include condensate, unless the context requires that such terms should not include condensate as herein defined, but shall not include liquid hydrocarbons produced in a cycling plant."

Section 3 has been amended by the addition of paragraph (m), which provides for a legal maximum gas-oil ratio of 2000/1, and pressure maintenance. It will be substituted for the pressure maintenance bills which have been introduced heretofore as separate measures, and reads as follows:

"(m) The production from an oil well of more than 2000 cubic feet of gas to each barrel of crude petroleum oil (is defined as waste): provided that any oil well producing with a gas-oil ratio in excess of 2000 cubic feet of gas per barrel of crude petroleum oil shall be allowed to produce daily that amount of oil and gas which under conditions of pressure and temperature existing in the reservoir from which (it) produces is equivalent in volume, under like pressure and temperature, to the oil and gas which such well, taking into consideration the size of the proration unit on which it is situated and other relevant factors which may be applicable, would be allowed to produce daily if its gas-oil ratio were 2000 cubic feet of gas to each barrel of crude petroleum oil.

"A gas well producing from the gas caps of a separate and distinct oil pool or reservoir in which an oil well or wells are completed and producing shall (to the extent it can produce without physical waste) be allowed to produce daily only that volume of gas and other hydrocarbons which under conditions of pressure and temperature existing in the reservoir from which produced is the equivalent in volume, under like pressure and temperature, to the oil and gas which would be produced daily from the oil well in the field producing the highest daily oil allowable if its gas-oil ratio were 2000 cubic feet of gas per barrel of crude petroleum oil; provided that if and when the operation of such a pool as an oil pool becomes no longer reasonable or feasible, the Commission after notice and hearing may declare such a pool to be a gas pool and authorize it to be developed and operated as such.

Uses of Gas

"Where any gas referred to in this subsection (m) is used for cycling, repressuring, pressure maintenance, or other secondary recovery operations in the field from which produced, only the volume of gas not returned to the formation from which produced shall be considered in applying the above rule.

"Provided, however, gas may be taken from one sand or one field to another if used to get greater oil recovery."

Section 7 has been revised by the addition of a new paragraph (d) in the section governing uses of gas. It provides that a legal use of gas may be:

"(d) The extraction of natural gasoline therefrom when the residue is returned to the horizon from which it is produced."

The fourth paragraph of Section 7 formerly allowed use of 10,000 cubic feet of gas for gas lift, would read as follows:

"(4) Either sweet or sour gas or casinghead gas may be used for gas lift in the bonafide production of oil from an oil well, where such gas is not used in excess of 2000 cubic feet per barrel of liquid produced from such well; provided that in no event shall more than the net amount of 5000 cubic feet of gas be used as gas lift per barrel of oil produced from such oil well. That portion of such gas injected into an underground formation for storage in a reservoir found by the Commission to be suitable for storing gas, or for secondary recovery purposes or utilized for any other lawful purpose shall not be computed in determining the net quantity of 5000 cubic feet of gas per barrel of oil."

An entire new section has been added to cover market demand of gas. It is this section to which the gas transmission companies are certain to object since it may require them to extend their lines to take waste gas. While the bill provides that this must be done on a "reasonable" basis and apply to "merchantable" gas only, the gas companies' definition of these terms, applied to particular cases might vary widely from those of the railroad commission. The new section (14) is set out in full below.

Language of Section

"Sec. 14. It shall be the duty of the commission, after notice and hearing, to ascertain and determine the reasonable market demand for sweet gas to be used for light and fuel purposes and for all other lawful purposes to which sweet gas may be put under the terms of this article, and by proper order to restrict the production of sweet gas in the various fields in this State to an amount equal to the reasonable market demand therefor or to an amount which can be produced without waste as elsewhere defined in this article. In such order the commission shall allocate, distribute, or apportion the total allowable production of sweet gas from gas wells among the various gas wells affected by the order on a reasonable basis and as provided in Section 13 of this article as amended. It shall likewise be the duty of the commission to prorate the daily gas well production of sour gas produced from each common reservoir of sour gas in this State. The hearing for such purpose shall be held at the same time as the hearing pertaining to the proration of sweet gas well production. The proration of sour gas well production shall be accomplished according to the manner and method herein provided for the proration of sweet gas well production. The Commission shall also determine that portion of the reasonable market demand for gas which can be supplied from gas produced with oil and reasonably accessible to market; and in allocating the market demand for sweet gas and for sour gas, respectively, shall give first consideration to merchantable gas reasonably accessible to market which is produced with oil; provided that no gas shall be considered reasonably accessible to market if it could be injected at a reasonable cost into a producing formation in the field from which it is produced and such injection is feasible and reasonably necessary in order to prevent waste. In ascertaining, determining and allocating the reasonable market demand for gas, the commission shall exclude the gas produced by an operator or purchased from another operator and used in drilling wells and

other development and production operations."

New, also, is the Section (21) which provides for voluntary pooling agreements. It reads as follows:

"Sec. 21. Voluntary agreements between or among owners, producers, royalty owners and other owners of mineral interests for the cooperative development and operation of properties in any oil field, gas field, oil and gas field or gas condensate field or portion thereof, *including marketing the products therefrom*, or for carrying on secondary recovery operations, including pressure maintenance, repressuring, cycling, recycling and other similar operations therein, when approved by the Railroad Commission of Texas, after notice in prevention of waste and hearing and finding that such operation will result in an increase in recovery of hydrocarbons, are hereby authorized."

The "waste" statute, Art. 6014, has been revised likewise to further define the powers of the commission. Paragraph (g), governing waste of reservoir energy has been partially revised. It includes a new provision that "the Commission may after notice and hearing, permit or *require* the cycling of gas in any pool or portion thereof and permit or require the introduction of gas or other substance into an oil or gas reservoir for the purpose of repressuring such reservoir, maintaining pressure or carrying on other secondary recovery operations; provided, however, no such operations shall be required by the commission unless as a result of such operations the ultimate recovery of oil, gas or both, in an oil, gas or condensate field will be increased in such an amount as to reimburse the operators for the additional costs involved in conducting such operations; and provided further that the commission shall not require the cycling of any gas reservoir that does not produce gas that will yield as much as one-half gallon of pentanes and heavier liquid hydrocarbons per 1000 cubic feet."

Year to Get Ready

Because many wells must be worked over if the bill passes, and considerable time would be required to hold hearings, devise proration plans, and discuss other details of its enforcement, the bill would not become effective until March 1, 1946. This would allow nearly a year to get ready.

Gas transmission companies are opposed to the bill but whether their opposition will block the passage or cause material alteration of its provisions, is yet to be determined. Battle lines should be drawn definitely at the hearing on April 3.

Billionth Barrel of Crude Processed by Aruba Plant

A cablegram was sent March 15 by Administrator Ickes to Lago Oil and Transport Company at Aruba, congratulating company officers and employes on the processing of the billionth barrel of crude since the plant was opened in 1929.

Congratulatory messages also were cabled to the company by Under-Secretary of War Patterson, Admiral Carter, Chief of Ail Staff Lieutenant General Barney M. Giles and others.

Pros and Cons Heard in Oklahoma as Secondary Recovery Bill Discussed

Legislation affecting secondary oil recovery, unitization of drilling blocks and tax on natural gas is being considered by the Oklahoma legislature and testimony at hearings discloses a diversity of opinions on the part of major oil companies and independent operators.

William J. Sherry, Tulsa independent, told the House Oil and Gas Committee that failure to employ secondary methods in the Oklahoma City field alone has cost between 50 and 100 million barrels of oil in the past six years and asserted that losses will continue until secondary recovery practices are introduced.

When the Oklahoma City pool was discovered engineers estimated reserves in the Wilcox zone at about 1100 million barrels, Sherry said. Of this 450 million barrels have been recovered and 30 million barrels remain to be produced by primary methods. He said that secondary recovery methods had been applied to two sections in the south end of the pool with considerable success.

Operators in the Oklahoma City pool have pointed out that conditions differ in the field and while certain types of secondary recovery methods may be successful in the south end of the pool the same methods might fail in the north end where sand conditions are entirely different.

Don Emery, counsel for Phillips Petroleum Company, said adoption of the secondary recovery measure would increase the ultimate yield of oil and declared there is "sound constitutional support for the measure."

Opposition to the measure which, in effect, provides for compulsory unitization of properties where a majority of operators agree and which would give some supervisory control to the Oklahoma Corporation Commission, was voiced by O. O. Owens, Tulsa independent, who feared control under such a plan by the big oil companies.

Opposition to the measure has also been voiced by representatives of the major oil companies who claim that it would give too much power to the Corporation Commission.

C. S. Sanders, with Stanolind Oil & Gas Company, and H. G. Ross, with Ohio Oil Company, expressed approval for the measure after suggesting a few amendments.

Some operators said they felt the safeguards for the property rights of minority interests were well protected in the provision that owners of 25 percent of the surface could veto a unitization order issued by the Corporation Commission.

Emery told the committee that the oil industry must look to present reserves for future supplies as the discovery rates has steadily declined.

Oklahoma lawmakers are also considering several tax measures affecting natural gas production. House Bill 377 would levy a tax of two cents per thousand cubic feet of natural gas produced wet or dry. House Bill 373 would levy, in addition to all other taxes, an excise tax at the rate of two cents per thousand cubic feet. Under this bill there would be excluded gas injected into the earth for lifting oil, storing, recycling or repressuring; gas used for fuel in connection with the operation and development for production of oil or gas in the field where produced; gas used in the manufacture of carbon black and gas legally vented or flared.

Pacific Coast API Group Will Meet on March 29

The Pacific Coast District, division of production, American Petroleum Institute, will hold its spring meeting, Thursday, March 29, at Biltmore Hotel, Los Angeles.

The program is as follows: Morning session, Bruce H. Robinson, General Petroleum Corporation, Los Angeles, presiding, with the following papers: "Gas Lift Through Small Tubing," A. C. Tutschulte, Tide Water Associated Oil Company, Los Angeles; "California New World Record Hole," Omar A. Cavins, Standard Oil Company of California, Taft, California; "Viscosity Measurements of Heavy Crudes," R. H. Zinszer, Union Oil Company, Orcutt, California.

Afternoon session, John F. Dodge, professor of petroleum engineering, University of Southern California, Los Angeles, presiding. "Field Testing of Drilling Fluids," Vernon B. Zacher, Tide Water Associated, Ventura, California; "Oil Well Casing Tests," F. R. Schmieder and R. J. Kettenburg, Shell Oil Company, Ventura, California; "Reservoir Fluid Flow Research," Norris Johnston, General Petroleum Corporation, Los Angeles, and N. Van Wingen, Richfield Oil Company, Los Angeles.

Evening session, George Suman, chairman Pacific Coast District, division of production, American Petroleum Institute, presiding, at a dinner.

Floods Affect Receipts Of Oil for East Coast

First effect of the recent Ohio Valley floods upon the East Coast Petroleum situation was noted during the week ended March 10 when oil shipments by rail to District 1 dropped slightly more than a million gallons a day, but even less than the 491,198 barrels daily that were received are expected to be reported for the week ended March 17 because of the delay in getting empties back to loading points, PAW reported.

The flood tied up or seriously impaired operations at almost all rail and barge unloading terminals from Pittsburgh to Cairo, Illinois.

Rail traffic started back toward normal as quickly as the flood waters subsided but barges continued tied up.

A spell of mild weather which set in along the Atlantic Seaboard at about the time of the flood did much to alleviate the situation, and PAW assured civilians that supplies on the East Coast were adequate, though not plentiful.

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Vigorous Exploration Activity Marks 1945

THE OIL WEEKLY's monthly record of exploratory drilling, and appraisal of new fields, new pay zones, and field extensions

Data compiled by District Editors and coordinated by L. J. LOGAN, Associate Editor

SO FAR this year the industry has carried on exploratory drilling upon a vigorous scale, with completions more numerous than in the early part of 1944. But development must be expanded beyond current proportions if exploratory completions of 1945 are to reach the goal of 5000 set up by the Petroleum Administration for War.

In the nine weeks ended March 3, 1945, completions of this class averaged 82 per week, an increase of 22 percent over the 67 weekly of the corresponding nine weeks of early 1944.

That 22 precent increase in exploratory completions was a greater gain than was shown for total completions of all kinds, which were up 11.6 percent for the same period, as shown in last week's issue, page 32.

While emphasis is being placed on the search for new reserves, the January-February rate of completing exploratory wells, 82 per week, if extended through the year, would result in only 4264 completions for 1945, against the 5000 desired.

It should be pointed out, however, that drilling activity in general usually is greater in the summer and fall than in the early months of the year. If that usual pattern is followed this year, the goal on wildcatting may be reached or at least closely approached.

Quality Also Encouraging

Results in 1945 have been encouraging in quality of discoveries as well as in the volume of drilling. For January and February of this year, 17.6 percent of total exploratory tests completed were productive, compared with a ratio of 16.2 percent productive in the like period last year.

Since both the volume of wildcatting and the ratio of success were higher than last year for January-February, the record of discoveries of new reserves has been quite encouraging. Total dis-

■ CONTINUED ON PAGE 66

ALSO SEE TABLES, PAGES 68, 69, 70

Summary of Results of Exploratory Drilling

ITEM	Feb., 1945	Jan., 1945	January-February 1944	January-February 1945	Percent Dif.
Oil Discoveries	36	45	64	81	+ 26.6
New Fields	27	29	43	56	+ 30.2
New Pays	9	16	21	25	+ 19.0
Distillate Discoveries	6	1	9	7	— 22.2
New Fields	4	1	8	5	— 37.5
New Pays	2		1	2	+ 100.0
Gas Discoveries	13	5	12	18	+ 50.0
New Fields	11	4	10	15	+ 50.0
New Pays	2	1	2	3	+ 50.0
Total Discoveries	55	51	85	106	+ 24.7
Extensions to Fields	13	11	13	24	+ 84.6
Oil Fields	12	10	10	22	+ 120.0
Distillate Fields			3		
Gas Fields	1	1		2	
Total Prod. Tests	68	62	98	130	+ 32.7
Dry Holes	238	370	507	608	+ 20.0
(Weekly Average)	59.5	74.0	56.3	67.6	+ 20.0
Wildcats	229	358	506	587	+ 16.0
New Pays	5	4		9	
Outposts	4	8	1	12	+ 100.0
Total Expl'tory Tests	306	432	605	738	+ 22.0
(Weekly Average)	76.5	86.4	67.2	82.0	+ 22.0
Percent Productive: (Weekly Average)	22.2	14.4	16.2	17.6	
Percent Dry: (Weekly Average)	77.8	85.6	83.8	82.4	

Dry hole completions are from weekly reports and totals represent completions for 4 weeks in February, 1945; 5 weeks in January, 1945; 9 weeks in Jan.-Feb., 1945, and 9 weeks in Jan.-Feb., 1944.

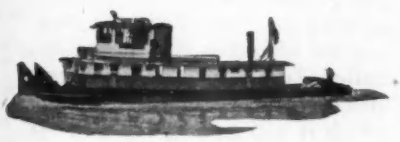
Results of Exploratory Drilling in February and First Two Months, 1945-1944, by Districts

State or District	FEBRUARY, 1945													FIRST TWO MONTHS, 1945															
	Productive Tests									Total Productive	Unproductive Tests			Total Exploratory Tests	Productive Tests								Unproductive Tests					Total Exploratory Tests	
	New Fields			New Pays			Extensions								New Fields			New Pays			Extensions			Total Productive				Total Dry			
	Oil	Gas	Dis.	Oil	Gas	Dis.	Oil	Gas	Dis.		Wildcats	New Pays	Outposts		Oil	Gas	Dis.	Oil	Gas	Dis.	Oil	Gas	Dis.	2 Mo. 1945	2 Mo. 1944	Wildcats	New Pays	Outposts	2 Mo. 1945	2 Mo. 1944	2 Mo. 1945	2 Mo. 1944
Alabama																							1			1			3	1	3	2
Arizona																													1			1
Arkansas											6			6												2		1	9	4	9	6
California											12			12												7	38			38	34	38	41
Colorado											1			1												1	2			2	1	2	2
Florida																											1			1		1	
Georgia											1			1													2			2	1	2	1
Illinois	1			2			5			8	15			23	1			3			9			13	15	50			50	51	63	66
Indiana											5			5	1									1	3	16			16	9	17	12
Iowa																										1			1	2	1	2
Kansas	6	1					1			8	26			34	11	2		1			3			17	8	65			65	70	82	78
Kentucky											5			5	1									1	6	25			25	21	26	27
Louisiana	2	1		1		2	2			8	6			14	3	1		6		2	3			15	6	26		1	27	20	42	26
North		1					1			2	4			6	1						2			3	2	19			19	12	22	14
South	2			1		2	1			6	2			8	3			6		2	1			12	4	7		1	8	8	20	12
Michigan							1			1	14			15	1						1			2	3	37		1	38	32	40	35
Mississippi											8			8			1							1	1	22			22	8	23	9
Missouri											1			1												5			5		5	
Montana											1			1												1			1	3	1	4
Nebraska											1			1												1			1	2	1	2
New Mexico	1									1	7			8	1									1		15			15	11	16	11
Ohio		3			1			1		5	7			12		3			1			1		5	3	12			12	10	17	13
Oklahoma	9			1	1		2			13	16			29	15			2	1		3	1		22	7	44			44	28	66	35
Texas	8	6	4	5			1			24	94	5	3	126	20	9	4	13	1		3			50	33	208	9	8	225	197	275	230
E. Texas Border											3			3											1	4			4	2	4	3
Rest of E. Texas		1								1	4		1	6	2	1								3	1	10		2	12	11	15	12
North Texas	2			1						3	20		1	24	5			5	1					11	6	45	2	1	48	44	59	50
West Central		1								1	8	2		11	2	1								3	1	15	2		17	21	20	22
West Texas	1			1						2	22	2		26	3			2			2			7	6	46	3	3	52	27	59	33
Panhandle											2			2												3			3	2	3	2
Upper Gulf Coast	2	1	1	3			1			8	8	1	1	18	2	3	1	6			1			13	3	18	2	2	22	21	35	24
Lower Gulf Coast	2	2	2							6	15			21	3	3	2							8	13	38			38	30	46	43
Southwest Texas	1	1	1							3	9			12	3	1	1							5	2	25			25	19	30	21
South Central											3			3												4			4	7	4	7
Wyoming											3		1	4	2									2	1	5		1	6	1	8	2
Total U. S.	27	11	4	9	2	2	12	1		68	229	5	4	306	56	15	5	25	3	2	22	2		130	98	587	9	12	608	507	738	605

How Engineering has Licked *HEAVY DUTY* CLUTCH TROUBLES

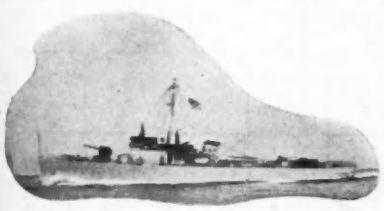
If you operate heavy machinery, you know that your time losses and your maintenance expense are very likely to come from clutch trouble.

Modern engineering has come to your rescue with the Fawick Airflex Clutch, which controls power and torque by air, without arms, levers, toggles or springs.



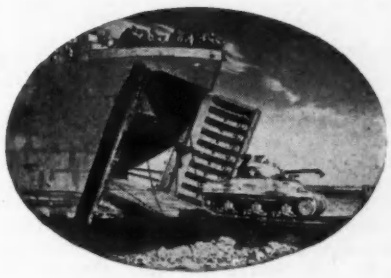
Tug goes from full speed ahead to full reverse in 3 seconds

Here is proof in the toughest kind of service. On this powerful Diesel-driven tug, the Airflex Clutch was thrown from full speed ahead to full reverse in 3 seconds, without damage to engine or propulsion mechanism. No other type of clutch could possibly absorb torque in this manner.



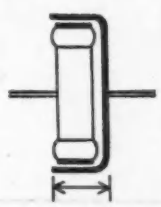
Greater maneuverability for all Naval craft

Hundreds of Diesel-driven vessels in the Navy, Coast Guard and Merchant Marine have been equipped with Airflex Clutches. Without exception, these ships have greater maneuverability. Valuable space is saved, time is saved in installation and maintenance, and in the training of personnel, and performance has new reliability, especially under combat conditions.



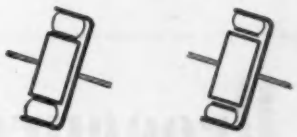
Landing Craft made easier to handle

The landing craft of various types that are so essential in modern warfare are being equipped with Fawick Airflex Clutches to give them more flexibility of operation, and greater dependability under extreme circumstances.



Space-saving is a definite plus

Because the Airflex Clutch has no toggles, levers or springs, it saves, through its compact design, a tremendous amount of space over other types. This is especially important on marine installations, and wherever heavy-duty drives must be put into restricted places, such as cranes, hoists and draglines.



How the Fawick Airflex Clutch Works

Inflate the rubber-and-fabric gland and it expands to engage the clutch. Deflate and the clutch is disengaged. As simple as that is the way the Fawick Airflex Clutch controls power by air, without springs or levers or toggles.

Suitable for many important industrial applications

The Fawick Airflex Clutch has proved its efficiency and economy on steel mills, rubber mills, paper mills, hoists, shovels, cranes, draglines, dredges, presses, punches—all types of heavy duty machinery. Acts as clutch, brake, slip-clutch, flexible coupling or power take-off.

Engineering service

The Fawick Engineering Department will gladly consult with you on clutches for all kinds of heavy duty drives. Booklet on request.

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FAWICK *Airflex* CLUTCH

POWER CONTROLLED BY AIR

Pressure Parting of Formations In Water Flood Operations

PART 2

By S. T. YUSTER and J. C. CALHOUN, JR.
School of Mineral Industries of the Pennsylvania State College

THIS article is the second of a two-part series which discusses the phenomenon of the pressure parting of formations or overburden lifting as it is sometimes called. Part 1 stressed laboratory studies of the conditions under which it will take place and the effects it will produce, with special emphasis on water flooding operations.

Part 2 discusses the method of detecting it in the field and observations obtained through field studies. While Part 2 also stresses its importance in water flooding, its application in pressure acidizing, squeeze cementing, salt water disposal and well drilling also are discussed.

IN VIEW of the importance of using pressures in water flooding which are below the point of lifting the overburden, and since the theoretical criterion given by the depth versus overburden pressure is not too definite, it would be desirable to have some field technique which could be used to determine the maximum safe flooding pressure. Such a technique was developed about six years ago by the Petroleum Production Research Laboratories at The Pennsylvania State College and has been applied successfully in the field. It is based on the law of flow of fluids through a porous medium, Darcy's law, which states that the rate of flow is directly proportional to the applied pressure differential, other factors being constant. From this it is apparent that if a new conductor were suddenly brought into action in parallel with an original conductor the relation of intake rate to pressure would change. In other words a graph of the water input rate versus pressure would not be a straight line but should show a break in the curve. Cracks formed by the overburden lifting would be additional conduits and should therefore change the pressure versus rate relationship. The problem then resolves itself into measuring the rate of change of intake with pressure over the pressure range of interest.

One method of measuring rate as a function of pressure on an intake well consists of adjusting a throttle valve at the well head, allowing the pressure to become settled at successively lower constant values and then measuring the instantaneous input rate of the water meter. Figure 1 shows such a set-up. The throttle valve is usually a needle valve which serves satisfactorily for adjusting and maintaining the pressure. The water meter must be calibrated before use and should have a fractional barrel dial. A differential flowmeter which will give instantaneous flow rates can be substituted for the integrating meter. The pressure gage should be accurate in order to have the data mean anything. It is advisable to backflow the well through some bleed-off valve (not through the meter) a reasonable time before taking data. This is for the purpose of removing any sediment which may be on the face of the formation since its removal during a test because of the variation in pressure will lead to very confusing results. The pressures may be plotted as either well head or formation face pressure. The latter has

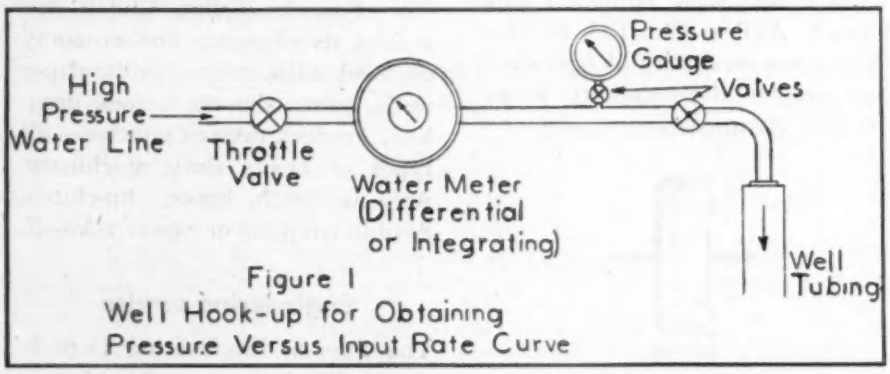
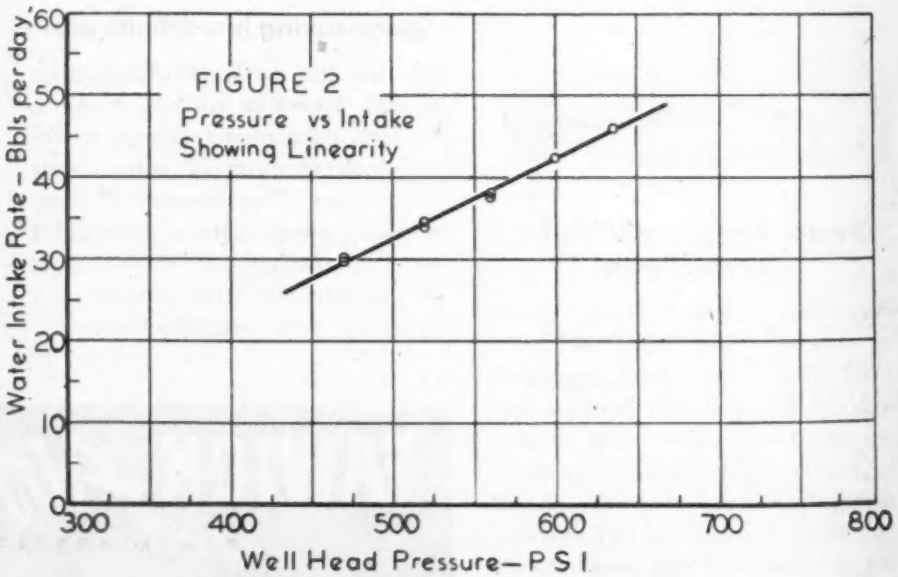
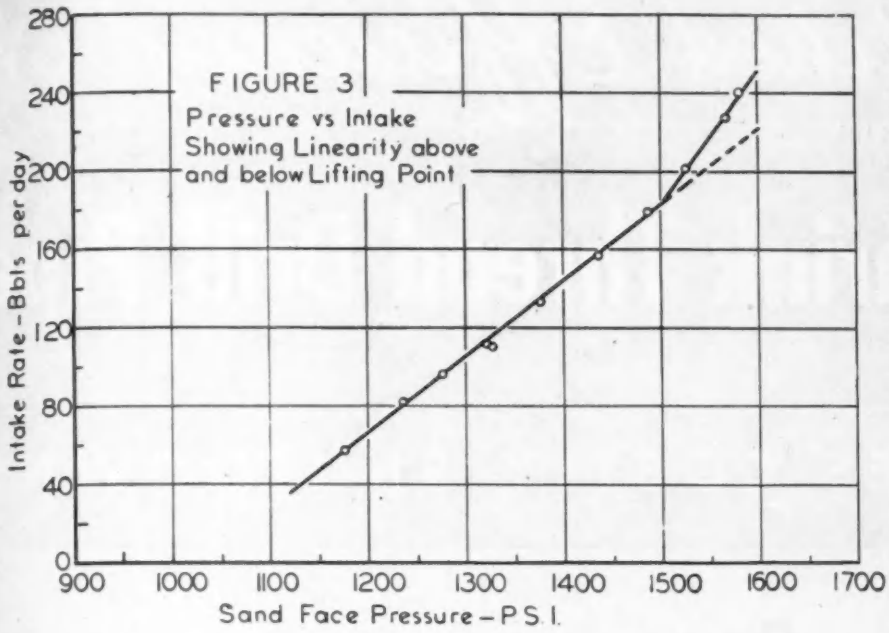


Figure 1
Well Hook-up for Obtaining Pressure Versus Input Rate Curve





more meaning in the correlation of depth of overburden versus lifting pressure. To convert well head pressures to formation pressures add the product of the depth times the factor 0.433. The pressure loss through the tubing has been calculated and found to be negligible for rates as high as 200 barrels per day flowing through two-inch pipe.

Usually a number of rates can be determined in a short interval of time, two or three hours for example. It is realized that there are shortcomings inherent in this method of obtaining the desired data as will be pointed out later. It is possible to take data while the pressure at the well head is successively increased or decreased or by both methods. It is known that as much as 24 hours are required to establish steady state conditions of flow at each pressure at which the flow is measured. Steady state flow conditions are required to determine the exact pressure at which the formations part but it is believed that these conditions are not essential for the average field test.

It can be surmised theoretically what might happen to a pressure versus input curve under the condition that steadied state flow had not been reached. Let us assume that a well is taking water under a constant pressure at equilibrium. The body of sand is made up of various permeability streaks which do not all behave similarly when the pressure is suddenly reduced. It is to be expected from observations on wells that some of the streaks of sand might even be backflowing while others are taking. Consequently, until the entire sand body is taking water at an equilibrium rate at the reduced pressure the amount of water metered at the well head will be less than that under equilibrium conditions. Likewise, when the pressure is suddenly increased from some steady flow condition, all strata will not behave the same and some will take water more rapidly than they would after steady conditions are reached. The rate of intake would then be greater than that for steady state conditions at the given pressure. If a well is reduced in pressure by increments and then brought up to the original value again by increments there should be a hysteresis effect and it would be expected that the two curves would not agree. The extent of disagreement would depend on the conditions in the formation and the time interval between readings. This is all based on the concept of backflowing from the formations taking water, with the lower permeability strata backflowing for a longer period of time than the higher permeability strata.

From the above considerations it would not be anticipated that a straight line would be obtained for intake rate as a function of pressure at all times. It might be so for some particular wells and not so for others.

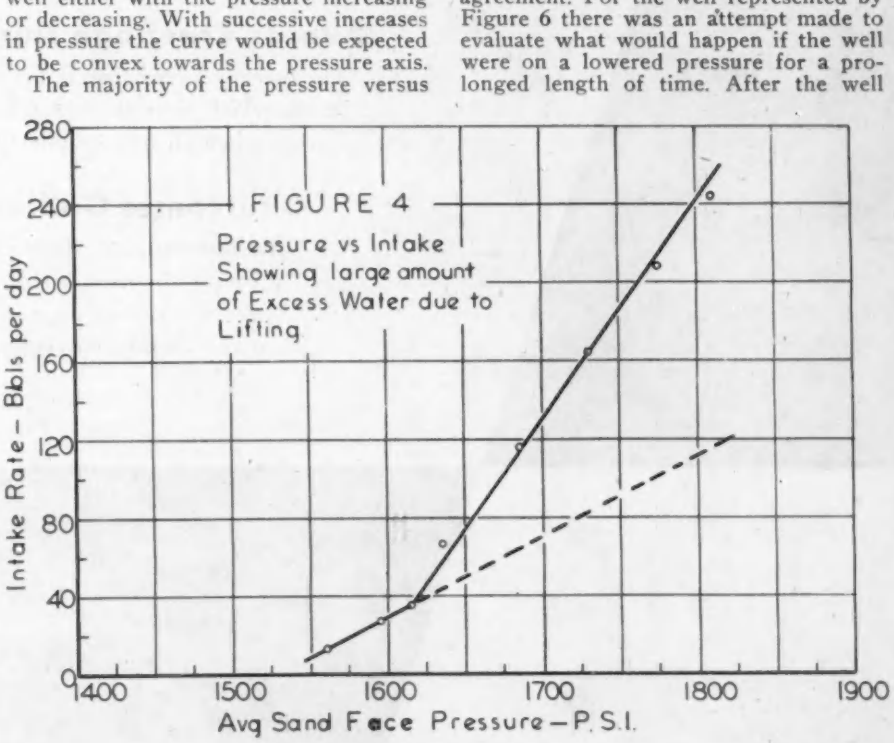
It would be expected that the water rates would drop below their true values as the pressure was successively lowered and hence the curve would be expected to be concave toward the pressure axis. No such data have been obtained on a well either with the pressure increasing or decreasing. With successive increases in pressure the curve would be expected to be convex towards the pressure axis.

The majority of the pressure versus input curves obtained by the method just described have been linear over the entire range of pressure observed because the well is probably behaving in a normal manner. Another smaller percentage of the curves have had two linear portions which would be indicative of a pressure part in formations. Some of the data have yielded actual curves which cannot be called linear over any great extent. Several linear portions can usually be drawn through the points of such curves but it becomes guesswork as to exactly how to draw them. These curves could indicate successive overburden lifts coming into existence at the higher pressures giving a continual change in the slope of the curve, but this is conjecture.

Typical Field Data

Figure 2 is a typical linear pressure versus input curve. The data actually taken for this curve are listed in Table 1. It will be observed that there has been more than one observation of rate for every pressure and that usually the first rate taken at a given pressure is lower than the succeeding ones. This is in agreement with the discussion on the attainment of equilibrium when the pressure is reduced successively. Figure 3 and Table 2 give the curve and data for a typical well on which a break is obtained in the curve. It will be noted that the data both above and below the break are linear. It will also be noted that successive rates at a given pressure vary in the same manner as those in Table 1. The change of linearity in Figure 3 does not indicate a marked overburden lift. Figure 4 on the other hand shows data on a well where there is a sharp break representing a relatively large volume of water entering the fissure created by excess pressure.

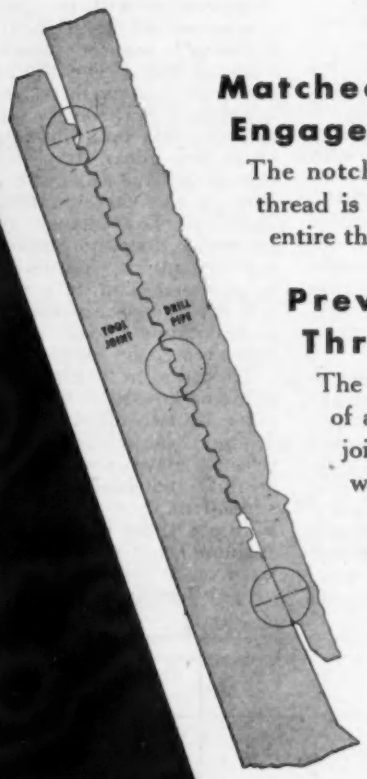
The data on Figure 5 represents two different pressure versus input curves taken by two different operators at two different periods. The time lapse between the two curves is one week. The original and duplicate data are in good agreement. For the well represented by Figure 6 there was an attempt made to evaluate what would happen if the well were on a lowered pressure for a prolonged length of time. After the well



THE "*Matched Efficiency*" OF

Spang Shrink Thread Drill Pipe a

ELIMINATES COSTLY SHUTDOWNS



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Matched Efficiency Eliminates Last Engaged Thread Failure;

The notch effect of the last engaged conventional type thread is eliminated and full broad thread contact over the entire thread length is secured.

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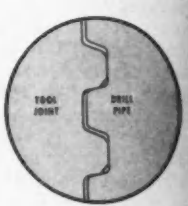
Prevents Leakage and Washout Through Threads;

The threads are relieved of resisting leakage by the use of a positive seating conical seal on the small end of the joint ahead of the pipe threads, the same type of seal which has proven so effective on Extreme Line Casing.



TYPICAL THREAD ENGAGEMENT

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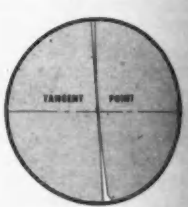

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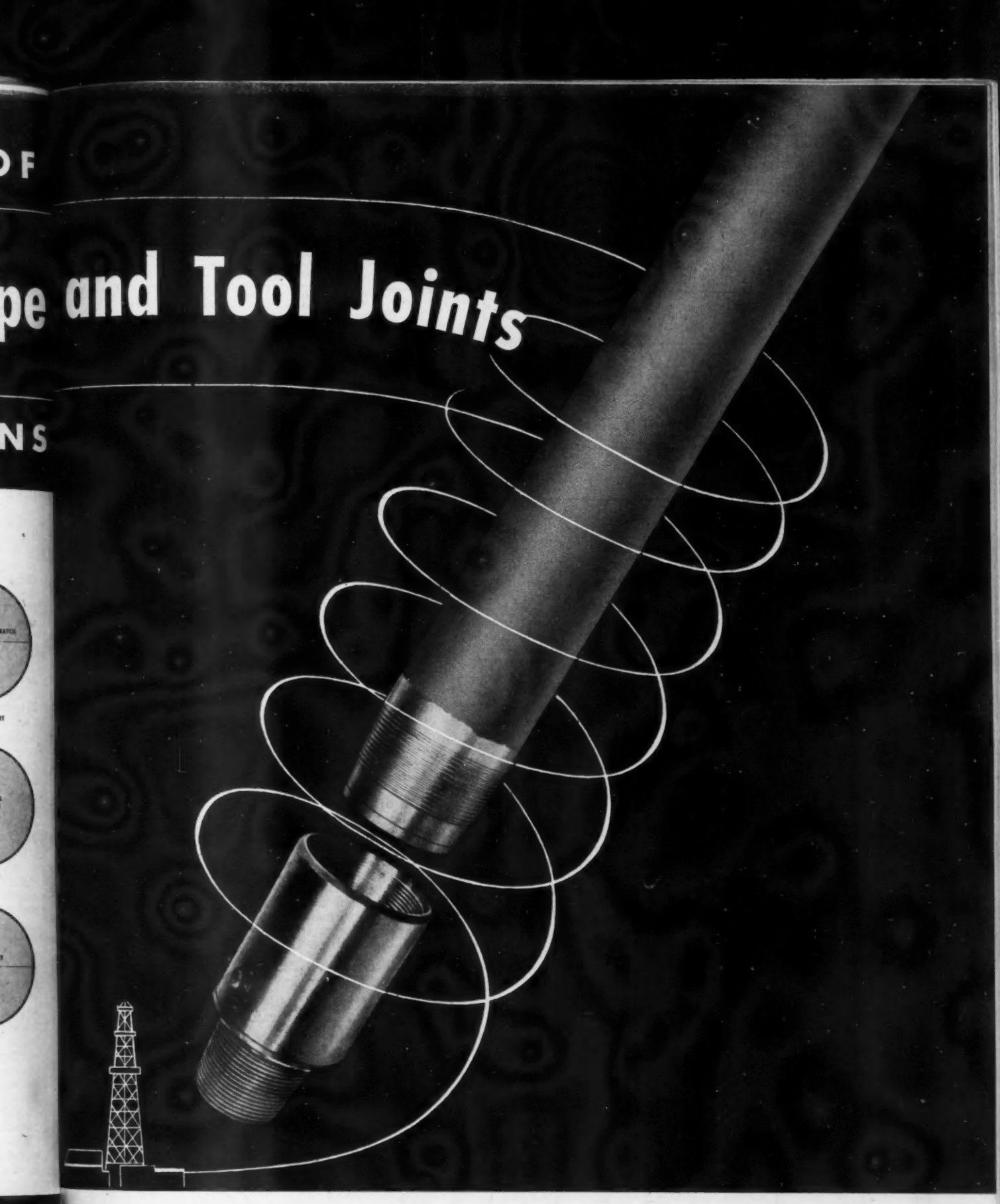

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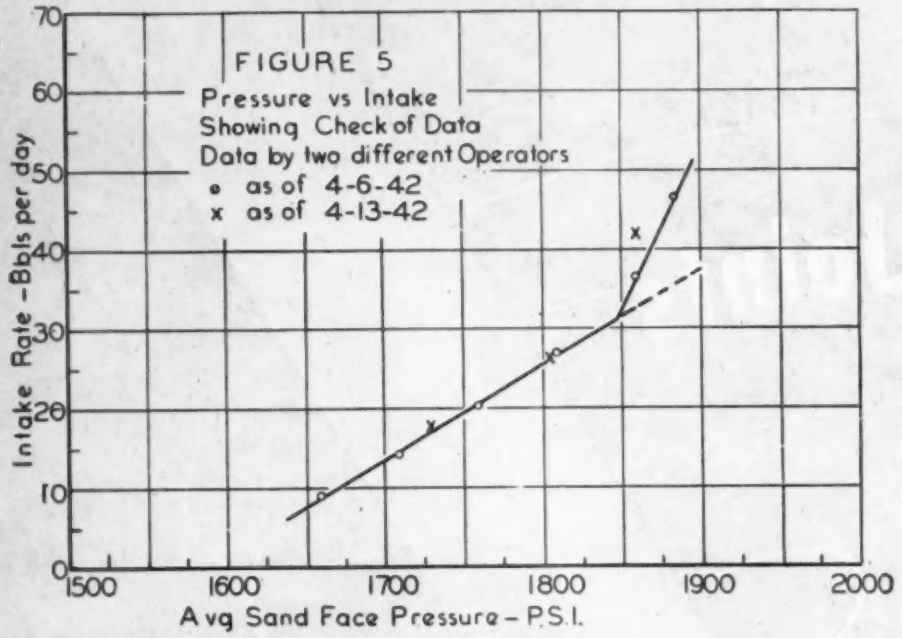


had been left pinched in for four days the pressure versus input curve was markedly different as can be seen from the graph. After the well was put back on full pressure a curve was taken the following day. This curve was somewhat different from the original curve, but an important point is that the overburden lift was shown to be about the same pressure. It would appear that a pressure versus input curves does not have to be a true equilibrium curve to indicate the approximate breaking pressure.

The next two figures (7 and 8) show data for two wells on which the data were taken first by lowering the pressure by successive decrements and then raising the pressure again by successive increments until the original pressure was reached. This technique was followed in order to compare the data obtained going up with that going down. The lifting point for one well is shown to be the same on both curves, but for the second well the two curves show lifting points differing by 100 pounds per square inch. It can be noted in both figures that the hysteresis effect mentioned previously is present. When the pressure is increasing the curves are much higher than when the pressure is decreasing.

TABLE 1

Data Taken on a Well to Determine a Curve of Pressure Versus Intakes

(Data are listed in order taken)

Well-Head Pressure, (psi)	Metered (Barrels)	Time (Seconds)	(Barrels per Day) Rate	Average
635	.1	188	46.0	
635	.1	188	46.0	46.0
600	.1	204	42.4	
600	.1	204	42.4	42.4
560	.1	231	37.5	
560	.1	227	38.1	37.8
520	.1	254	34.0	
520	.1	250	34.6	34.3
470	.1	290	29.8	
470	.1	287	30.1	29.9

Figure 9 is a plot of data on two separate wells where there are no extended linear portions. It is quite possible that this curve indicates several lifting points as drawn, or conditions may have been too transient to allow any comment on possible parting.

Table 3 lists well in the Bradford-Allegany area of Pennsylvania on which pressure versus input curves have been obtained and which have indicated overburden lifting points. The pressures at which these formation parts occur have been determined and the lifting factors have also been calculated; that is, the pounds of pressure at the sand face per foot of well depth. The depth used is the average distance from the surface to the producing formation. Numerous operators have helped in the taking of these data. It will be noted that with two exceptions the factors at which lifting occurs range from approximately 0.80 to 1.40. This is in fair agreement with the postulated average of 1.0 pound per square inch per foot of overburden. Further examination of the data and the location of the well shows a close agreement in behavior with theories discussed earlier in this paper. It was pointed out that the lifting factors might well be smaller for wells on top of a hill than for adjacent wells in the valley. If the formation in question were level the lifting factors would be inversely proportioned to the depth from surface to formation.

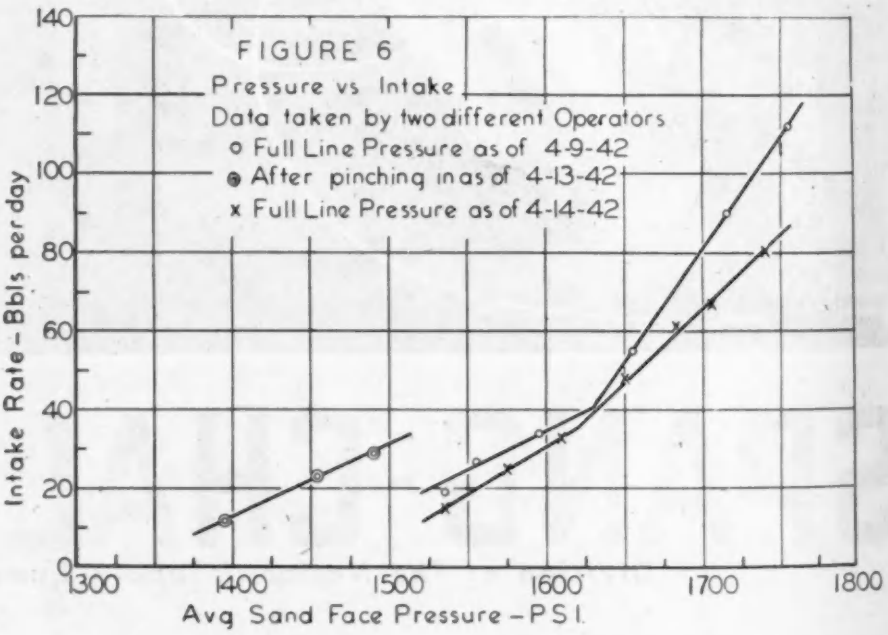
TABLE 2

Data Taken on a Well to Determine a Curve of Pressure Versus Intakes

(Data are listed in order taken)

Well-Head Pressure, (psi)	Metered (Barrels)	Time (Seconds)	(Barrels per Day) Rate	Average
805	.25	90	240	240
790	.25	95	227	227
750	.25	109	198	
750	.25	106	204	201
710	.25	122	177	
710	.25	120	180	179
660	.125	67	161	
660	.125	71	152	
660	.125	70	155	
660	.125	67	161	
660	.125	69	157	157
605	.125	80	135	
600	.125	83	130	
600	.125	82	132	
600	.125	80	135	133
550	.125	100	108	
550	.125	97	111	
550	.125	105	105	
550	.125	93	116	110
545	.125	97	111	111
500	.125	113	95.6	
500	.125	112	96.5	
500	.125	113	95.6	95.9
460	.125	135	80	
460	.125	130	83	81.5
400	.125	195	55	55

In Figure 10 the depth of sand versus the lifting factors has been plotted for the wells in Table 3. There is a general trend for the lifting factor to increaes with decrease in depth. It is believed that a good part of this is due to localized changes in elevation of the top of the wells which would make the lifting factor high on wells in the valley and low on the hills. However, part of the trend may be due to a factor previously discussed; namely, that the full weight of the overburden need not be lifted to create a part in the formation. With greater depth there would be an increased possibility of the upper forma-



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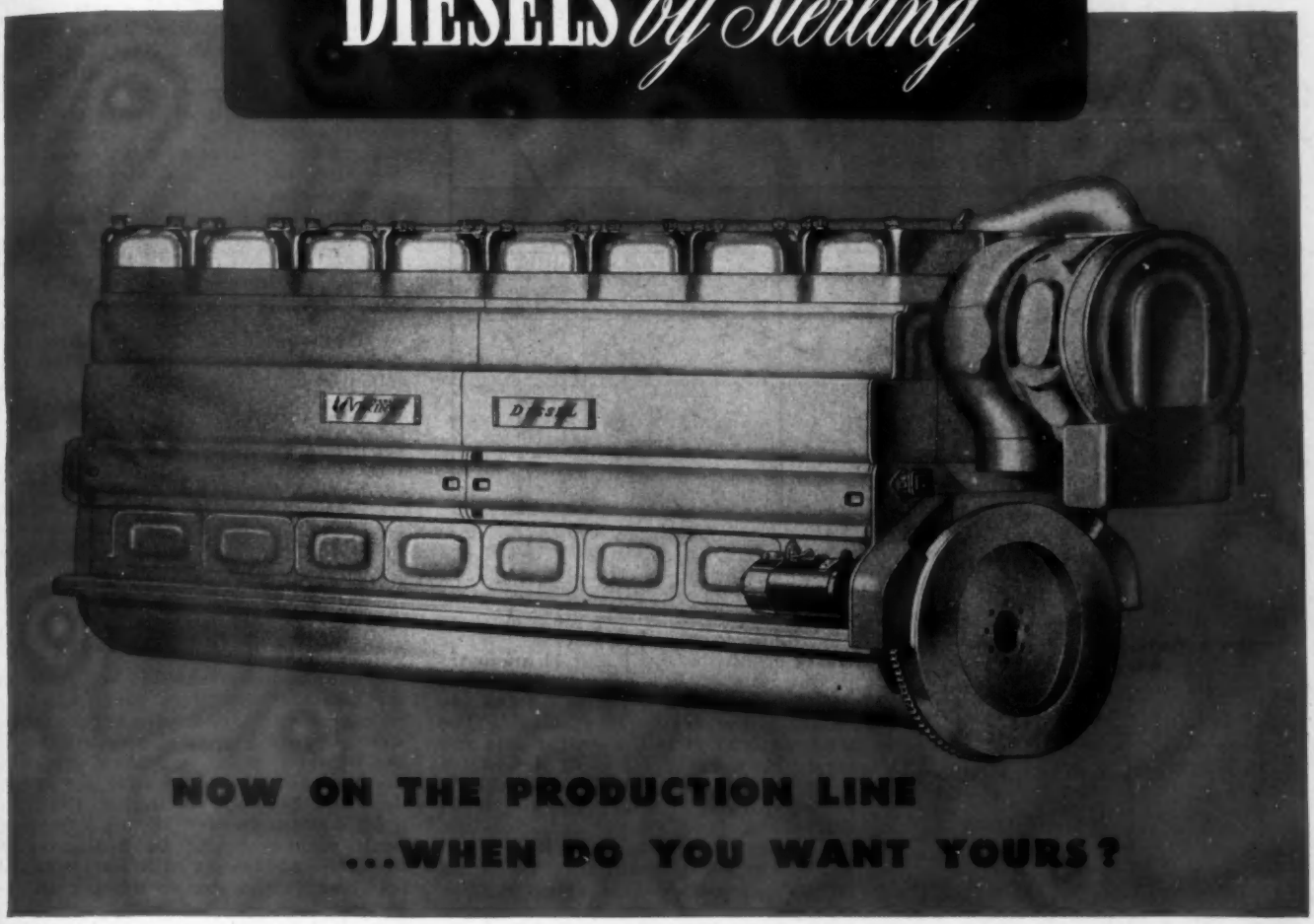

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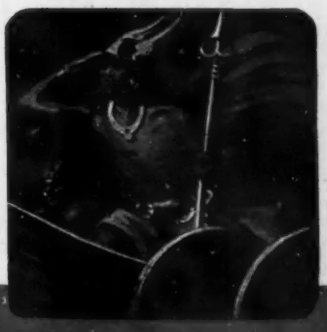

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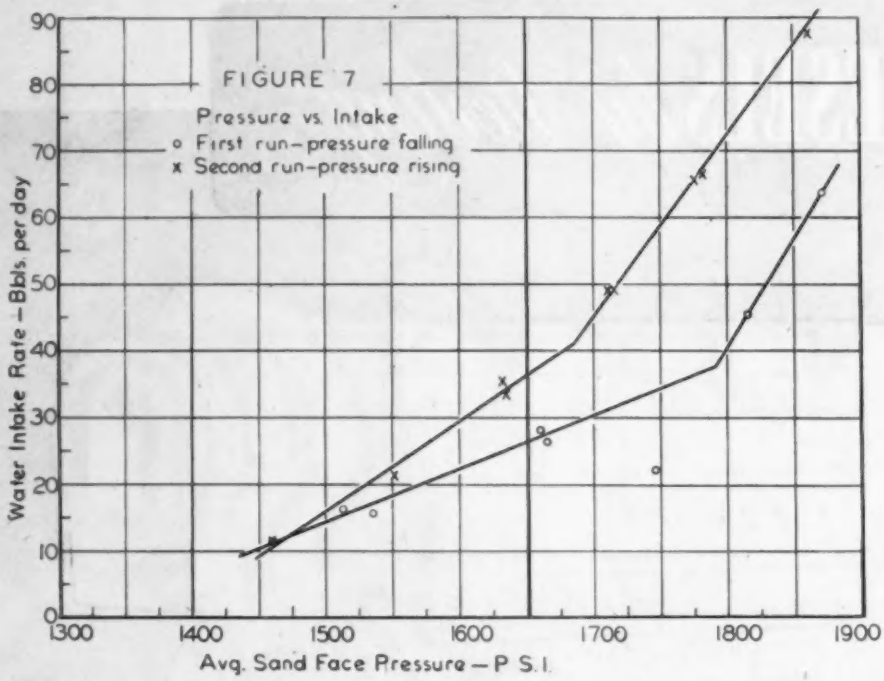


TABLE 3
Pressure Parting Data from Bradford-Allegany Area

Well No.	Pressure of Break	Average Depth	Parting Factor
1-A	1180	1290	.913
1-B	1660	1340	1.24
1-C	1420	1280	1.11
2	1420	1311	1.08
3	1484	1276	1.16
4	2290	2100	1.09
6-A	1762	2160	0.81
6-B	1905	2160	0.88
7-A	1465	1864	0.79
7-B	1458	1877	0.78
7-C	1495	1819	0.82
7-D	1515	1794	0.84
8-A	1594	1230	1.30
8-B	1727	1365	1.26
8-C	1775	1360	1.30
9-A	1532	1224	1.25
9-B	1612	1238	1.30
9-C	1847	1290	1.43
9-D	1630	1280	1.28
9-E	1510	1239	1.22
10-A	1818	1794	1.02
10-B	1475	1813	0.81
10-C	1550	1684	0.92
10-D	1705	1850	0.92
11-A	1210	1720	0.71
11-B	1310	1640	0.80
11-C	1412	1550	0.91
11-D	1328	1690	0.79
11-E	1330	1570	0.85
12	1645	1850	0.89
13-A	1423	1390	1.03
13-B	1385	1282	1.08
14	1227	1250	0.98
15	1080	915	1.18
16-A	553	1180	0.47
16-B	535	1070	0.50

tions exerting a bridging action. The range of depths in this study is not sufficient for a more thorough analysis of this phase of the problem.

The effect of apparent depth may be more readily grasped by referring to the grouping of wells in Table 3. Those wells designated by the same number are on one lease, and since none of the leases are very large they represent localized areas. The leases designated by Nos. 8 and 9 are both essentially on the valley floor and are within four miles of each other. The factors on both leases are high. Those wells designated by 7 and 10 are on the crest of hills and are within two miles of one another. The lifting factors here are low. In addition these latter two groups of wells lie over the highest contours of the Bradford sand, which circumstance may contribute to the low factors. Those leases designated by 1 and 11 are within one mile of each other but they are in a different part of the field from any of the other leases cited above. The wells designated 11 are on the side and crest of a hill whereas those designated 1 lie in the valley. The difference in elevation is not extremely marked, however.

For any one grouping of wells in Table 3 it will be noted that the lifting factors are surprisingly constant. For example, the five wells in group 9 have an average lifting factor of $1.29 \pm .05$. This is a small deviation considering the fact that on different leases the factors range from 0.71 to 1.43. This consideration might well point to the contribution of local conditions to pressure parting.

In Line With Theory

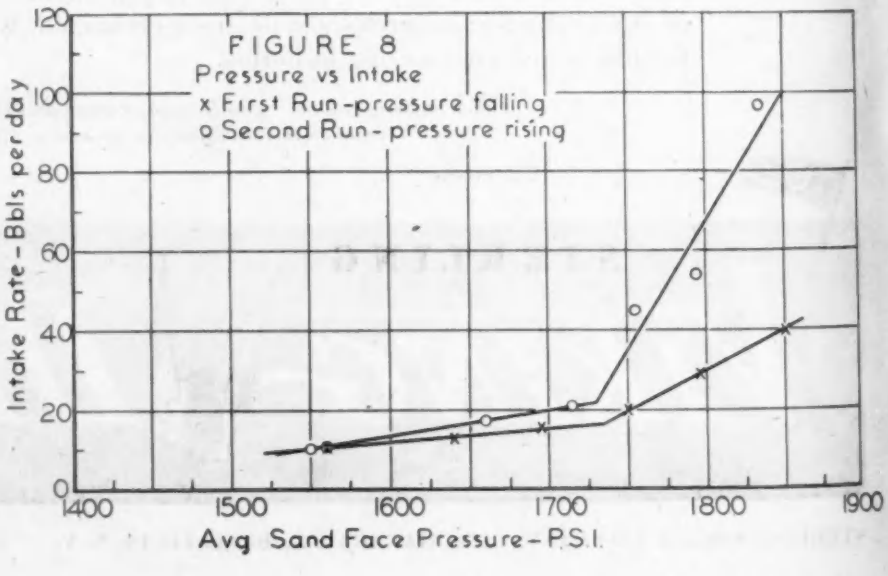
This is not contrary to the theory of the pressure parting of formations presented earlier. The presence or absence of shale, strata or lamina, the variation in tensile strength of the various formations, the variation in shooting, and the placement of packers are all factors which can cause a variation in the lifting factor. For example, the placement of a packer just within a sand instead of in the shale just above it may increase the pressure at which the formations part since the tensile strength of the sand would in general be greater than the shale. A bad packer seat can cause variations in the lifting pressure, since water may go around it to some point higher in the well and part the formations at that point.

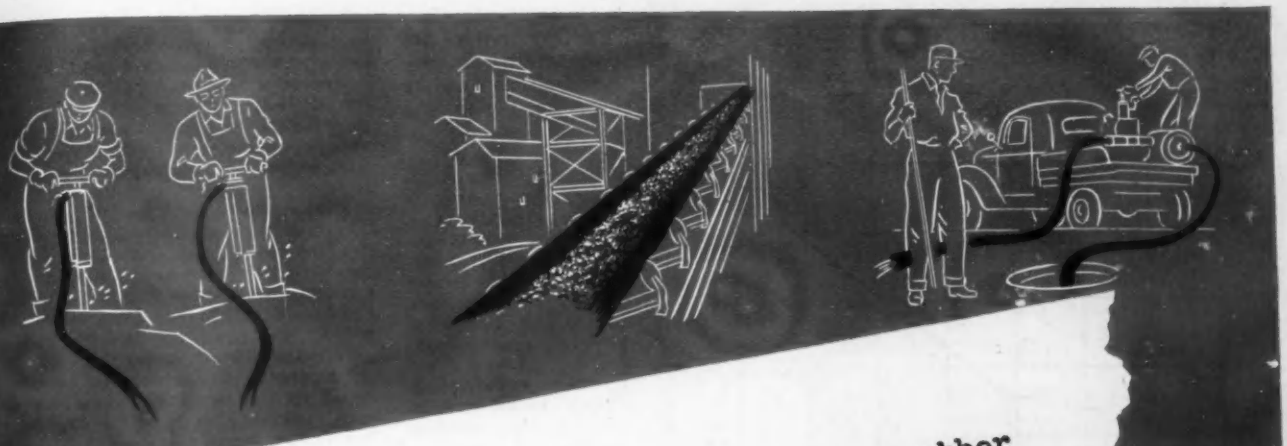
It might well be questioned as to why the last two values listed in Table 3 are so low. The breaking factors, 0.47 and 0.50, are the lowest ones on record. As a matter of fact they are so low that it is hard to believe that the breaks in the curves could be due to overburden lifting. Nevertheless, the data obtained indicate good breaks. Since these two wells are on the same lease, there may be a limited local condition allowing the low lifting. The wells are on high ground which would tend to make their factors low but not so low as is indicated. The wells are in the Allegany field and the highest factor obtained to date for any well in that field is 1.16, the average value so far being about 1.05 which is lower than the corresponding value for the Bradford field.

Lowering, Then Increasing

Some mention should be made of the fact that operators have been able to exceed the lifting pressure on some wells by lowering the pressure below the breaking point and then gradually increasing it again by small increments until the pressure is higher than the previous overburden lifting pressure. Such process might be analagous to the physical concept of momentum and could be comparable to moving an object by a sharp blow which cannot be moved by a much larger force applied steadily.

One further anomaly has been encountered in the work with pressure versus input curves. This concerns an effect noted on a well with pressure parting, and which was treated with wax emulsion for selective plugging. According to the best known facts concerning the mechanism of selective wax plugging there should be no effect upon an overburden lift. Figure 11 gives data for this well which was selectively plugged two different times. An over-





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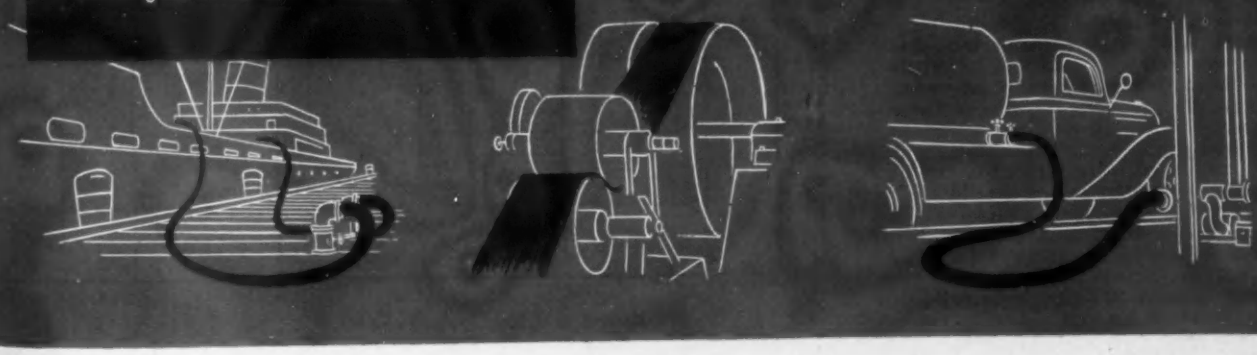

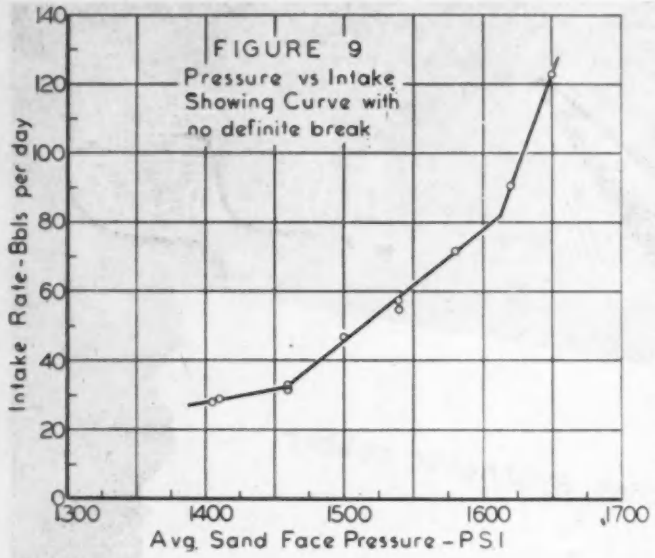

burden lifting break was obtained originally and after both treatments, but the pressure at which the break occurred apparently advanced. There is no known explanation for this.

General Applications of Pressure Parting

While formation parting due to excess pressures is of great importance in water flooding since it place an upper limit on the rate at which low permeability and shallow sands may be flooded, the phenomenon is of interest in other phases of petroleum production. Surprisingly enough, it is of advantage in certain cases. In acidizing[4] and squeeze cementing work[5] pressures which are sufficiently high to part the formations are needed for a successful job. In salt water disposal wells, it would be desirable in some cases to increase their capacity by using pressures which will part the formations. While the problems in these applications are not the same as in water flooding the principles which apply are quite similar. For example, it was pointed out earlier in this discussion that shooting a well may initiate horizontal fissures or create planes of weakness which would cause the formations to part at a minimum pressure. It would follow that the application of a shot (it would not have to be large) before pressure acidizing and squeeze cementing may be helpful. The fluids in question would penetrate the horizontal parts in the formation at a minimum pressure since the factor of the tensile strength of the formation has been eliminated. A similar technique should be used in completing a water disposal well since the need may arise sometime during its life, to increase its capacity considerably. This can be accomplished by parting the formations with excess pressures.

There is localized expansion of the formations when they are parted. While it may be extremely difficult if not impossible to determine the magnitude of this at the surface, it is nevertheless present. If the well has been cased and cemented through the producing formations and then perforated for production, the cemented casing would act as a clamp on the formations just around the well bore. Such a clamp would oppose any vertical expansion of the formations and therefore minimize any parting. This would be undesirable for pressure acidizing and squeeze cementing. The writers are not aware of any comparison having been made on the relative success of acidizing and cementing through perforated casing as compared to the same treatment on an "uncased" formation. In view of its importance this factor should be given some consideration. If the presence of such a formation clamp prohibited a desired formation parting in acidizing and squeeze cementing jobs consideration might be given to cutting the casing (this would reduce the clamping action) before treating the well.

While the parting of the formations may be desirable in cementing, acidizing and water disposal, it is generally harmful in water flooding. It was pointed out above that the cemented and perforated casing would act as a clamp on the formations and oppose any such action. Possibly this may be a solution to the problem in water flooding when flooding low permeability or shallow sands. Another type of formation clamp which could be used on shot wells would be two packers separated by some perforated tubing. The two packers could be cemented above and below the formation being flooded. It should be pointed out that any such procedures would be purely experimental. Since the local compressibility of the formations and the elasticity of the tubing may allow some very tiny fissures to form, the difficulty would not be solved completely. In addition, if the pressure in excess of that required to part the formations was not dissipated right around the well (the location of the clamp), the fissure could initiate at some distance away from the well. It would follow that the geometry of the system (effective well radius, sand thickness, etc.) as well as the effective permeability will effect the behavior. No tests have been made as yet on this suggested method of increasing the uper safe limit of flooding pressures, but it is hoped that this will be possible in the near future.

There is one other possible application of pressure parting in petroleum and natural gas production which should be given consideration and that is in connection with the casing program in the drilling of new wells. In drilling into formations which are under a pressure equal to the hydrostatic head at that point, fluid may be released which is under sufficient pressure to part formations exposed higher up in the well. This assumes, of course, that casing has not been set and cemented to a sufficient depth. It was pointed out in the previous discussion that the hydrostatic head at depth h feet for fresh water at 60° F. was equal to 0.433 h. This pressure is capable of parting the formations at a depth, D, which is numerically equal to the pressure since the downward pressure exerted by the overburden is just equal to the depth. In equation form it is

$$D = 0.433h \tag{17}$$

and

$$\frac{D}{h} = 0.433 \tag{18}$$

In other words, in drilling a well, the ratio of the depth to which casing has been placed to the total depth drilled should be at least equal to the factor 0.433 to minimize the possibility of parting the formations higher up in the hole. Such parting could result in the loss of fluid, cratering, or both. If this line of reasoning is correct, a well at 1000 feet should have casing at least down to 433 feet. No consideration has been given to the head exerted by the produced fluids since that might be considered as a safety factor along with the tensile strength of the formations. The head would be less in the case of gas wells than in oil wells and the safety factor would be less in gas wells. Counteracting the safety factor is the bridging effect of the overlying strata which tends to decrease the pressure necessary to part the formations. Another counteracting influence is the possibility that the formation pressure may be greater than the hydrostatic pressure at the well.

This discussion has attempted to bring attention to the phenomenon of pressure parting of the formations and its importance in petroleum production. It is not understood too clearly and it is hoped that further studies will be made on the problem. Data are needed to compare the behavior in one area un-

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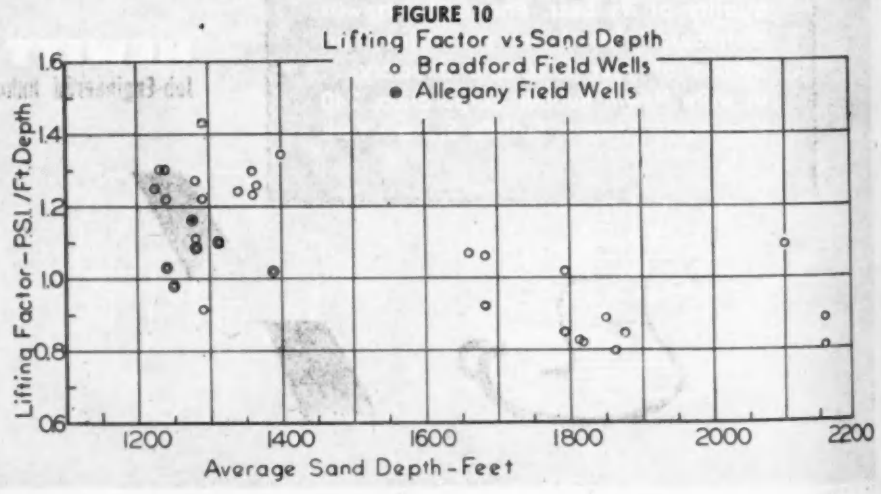

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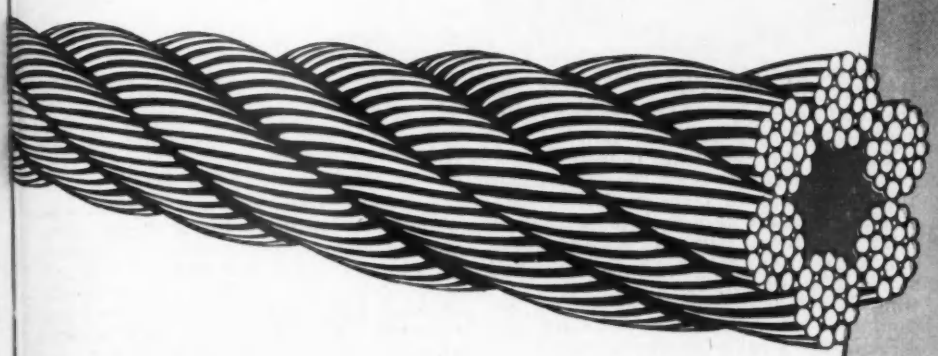

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Q How do the above groups or classifications of ropes compare as to abrasion resistance and flexibility?

A *The 6x7, 6x19, and 6x37 ropes are rated as listed with respect to abrasion resistance, the 6x7 having the greatest resistance to abrasion. The flexibility of these ropes follow in the same order with the 6x7 having the least flexibility.*

Q Why are so many different constructions of wire rope used?

A *Since practically every type of installation on which wire rope is used is either dissimilar with respect to equipment or operation, a good number of different constructions of rope are necessary to obtain maximum rope service.*

Postwar Use of Radio In the Oil Industry

Wartime research has succeeded in developing facilities that will be of incalculable value to isolated drilling crews, pipe line workers, roving repair groups and service gangs. Use of radio for remote control of motors present many possibilities of interest.

By F. W. LITTELL

Chairman, Board of Directors, Petroleum Industry Electrical Association

THE petroleum industry has successfully used radio for the past 18 years in geophysical exploration work, and it has used available common carrier ship-to-shore radio-telephone service for drilling and production operations off shore in the Gulf of Mexico. However, the need for radio in other branches of the industry's operations has not been overlooked. Heretofore, necessary restrictions on frequency allocations, the demand for which far exceeded the physical limitations of space available in the frequency spectrum, prohibited the wide-spread use of radio in this field.

During the period immediately preceding the present war, development of the radio art progressed to a point where practical use of higher frequencies became a reality and greater use of the spectrum became possible. During wartime, of course, practically all radio equipment has been manufactured for the armed forces, and the engineering research has been directed toward improvements in equipment and methods employed in radio communications for military and naval purposes.

Wartime research has developed new tools, circuits, tubes, and techniques which will provide certain additional new services at frequencies well above the range of those in prewar use. However, before plans could be made to utilize fully these higher frequencies, it was necessary to formulate system standards for new and existing services and to lay the groundwork for an intelligent rearrangement of frequency allocations.

The Federal Communications Commission had this problem in mind as early as November, 1942, when its chairman suggested that the radio industry set up an organization which might be effective in resolving the problems of radio frequency allocations and system standards.

Oil Industry's Requirements

Since the problem involved all present uses of radio as well as its future use by newcomers to the field, it immediately became apparent that the radio industry would not be able to handle the job alone. Early in 1943, a committee composed of representatives of the Radio Manufacturers Association and the Institute of Radio Engineers undertook the development of a plan to carry out the proposal made by the Federal Communications Commission. This resulted in the formation of the Radio Technical Planning Board with headquarters in Chicago. Any individual or organization having either a direct or indirect interest in any of the services or problems to be considered was invited to participate in the Radio Technical Planning Board's activities.

Because the Petroleum Industry Electrical Association is vitally interested in all methods of communication, particularly those within and for the petroleum industry, it naturally followed that the association became a contributing sponsor in the Radio Technical Planning Board and that its president appointed a committee to formulate the oil industry's radio requirements.

The committee, now officially known as Committee No. 9, Provisional and Special Emergency Oil Industry Services, Panel No. 13, Radio Technical Planning Board, presented its report stipulating and justifying the petroleum industry's requirements for radio communication services, to the Federal Communications Commission at a hearing held in Washington on October 24, 1944. All member companies of the association have been furnished copies of the complete report as presented to the FCC and have been kept fully informed of the committee's activities.

In general, the oil industry's request for frequency allocations were based on actual every-day operating conditions. It was stated in the report that radio communication was necessary in oil field production operations where no common carrier or private wire lines now exist. Such operations may be from ten to fifty miles from existing communication facilities. In many such locations the extension of wire lines is physically impossible, in others the cost would be extremely prohibitive. When moving into unproven territory to begin test-well drilling it may be physically possible to construct communications facilities to these points; however, because of the distances generally involved, this would not be economically practicable until the field had been proven.

Temporary Use Necessary

The use of radio as a temporary means of communication is necessary while new oil or gas fields are being proven in, after which extension of common carrier and/or company owned circuits may be made. Because of the generally isolated locations, nonavailability of established communications and long, slow or poor routes of transportation, radio communication is required for the safety of the drilling crews and inhabitants of the immediate vicinity during times of disaster. The use of radio in such locations would enable aid to be summoned quickly in case of serious accident such as a well blowout, explosion, fire or other calamity perhaps of such magnitude that loss of life and property would be extensive unless adequate help was received without delay.

Constant, reliable radio communication would facilitate the safe operation of equipment and protection of adjoining properties, notification of mechanical failure of machinery and equipment, control over the movement of supplies and materials and other operations incidental to the drilling procedure. Geological and other technical information must be transmitted quickly to and from headquarters in order not to cause costly shutdowns, delays or failures. Radio would be of inestimable value in this service.

Further development of the radio art should provide practical "facsimile" transmittal. Use of this class of service by the oil industry would minimize the shutdown time required to send copies of electrical well logs to the headquarters of the drilling company for examination by geologists and the return of instructions to the drilling crew. Facsimile radio communication would also be used in transmitting various meter readings and, in an emergency, even maps.

Bridging Gaps

Most pipe line companies, by virtue of necessity, were forced to build their own wire line telephone and telegraph systems for their dispatching and operating requirements. These private wire lines are susceptible to failure due to the elements and other uncontrollable causes, at which times it is frequently necessary to shut down operations and await the restoration of communication service. Radio service to bridge such gaps is the practical solution to this problem. In fact, fulltime radio communication would prove a boon to pipe line operations because of the continuity of service afforded.

Some pipe lines now are being patrolled by airplane. However, to perfect this most effective and labor-saving technique, radio communication between the planes and the pumping or compressor stations is necessary. This is particularly true along extensive lengths of line where construction of safe landing fields at desirable intervals is not economically practicable.

Radio can be used effectively for communication with roving pipe line repair crews where other means is not available. Such crews customarily use existing wire line facilities for scheduled

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reports, but radio would make it possible to notify them of emergencies arising between scheduled contacts. Radio also would be extremely useful for communicating with construction crews before completion of permanent communication facilities. It would also be of greatest value for directing repair crews engaged in the restoration of private wire line service which may be interrupted by sleet storms, floods, hurricanes or other causes which also impair commercial wire services for considerable lengths of time.

Use of the "walkie-talkie" type of apparatus for short range service between gangs working from two to five miles apart and having no other means of communication available would be very practical and should increase efficiency in effecting repairs as well as add to the safety of the men engaged in the work. For instance, crews constructing or repairing pipe line river crossings could talk to each other from opposite banks of the river and thus save many hours of down-time.

Remote Control Possibilities

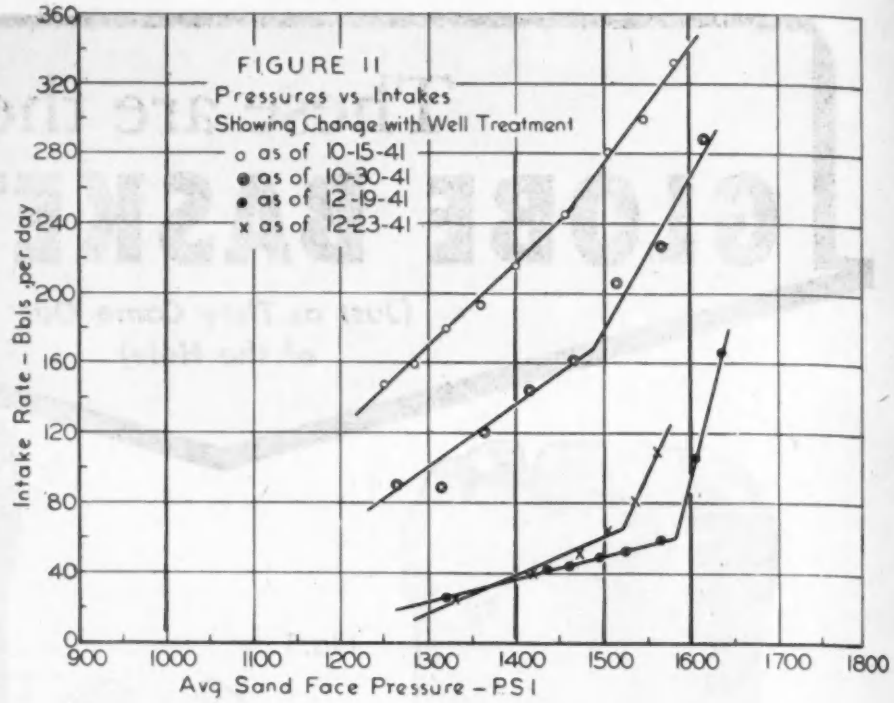
The use of radio for remote control has not been thoroughly explored, but progress in that direction no doubt will follow experiments in starting and stopping motors. If successful, such applications would be valuable for isolated oil field motors on pumping wells, pipe line gathering systems and tank batteries.

The petroleum industry has tentatively been allocated by the Federal Communications Commission, 46 channels of frequencies above 25,000 kilocycles. Of these, 27 are in the 25-28 mc band, ten channels are between 30 and 40 mc, and nine channels are between 156 and 162 mc. All must be shared with other industries but interference should not be serious. Additional frequency channels above 1900 mc may be allocated on an experimental basis pending adequate showing as to need and technical requirements.

The Federal Communications Commission has recognized that the industry's needs, particularly in connection with pipe line operations, may require the use of radio communications upon a basis more permanent in character than that contemplated in the present rules of the commission governing the operation of provisional stations, and it will give consideration to the necessity for establishing a class of station which will provide radio service consistent with the industry's requirements. Experimentation with frequencies above 1900 mc should develop a technique which would justify the establishment of reliable and permanent radio stations of a type suitable for wide-spread utilization by the petroleum industry.

Ohio Company Authorized To Transfer Allowables

Oklahoma Corporation Commission has issued an order authorizing The Ohio Oil Company to transfer oil allowables on high gas/oil ratio wells in the East Pauls Valley pool of Garvin County, to lower gas/oil ratio wells on the same lease which produce from the same formation, provided the gas/oil ratio is at least 2000 cubic feet per barrel lower. At the same time the commission authorized duel completion in the field provided such dual completion results in separate production from each formation at all times until marketed.



Pressure Parting

■ CONTINUED FROM PAGE 42

der certain conditions with the behavior in other areas under comparable conditions.

In summary it should be pointed out that:

1. Formations can be parted by the application of excess pressures.

2. This pressure in pounds per square inch is about equal to the thickness of the overburden in feet. The tensile strength of the formation should be added for the initial parting.

3. When formed because of excess pressure application the conductivity of these horizontal fissures is extremely high. With a separation of 0.01 of an inch, the permeability capacity is equivalent to 4,540 millidarcy feet. A uniform radial fissure having an outer to inner radius ratio of 10 and a separation of 0.001 inches will conduct 47.3 barrels of water per day at 1000 psi pressure.

4. These fissures may account for some of the excessive by-passing and loss of production in certain water flooding projects.

5. A method is described which has been used in the field for some time for experimentally determining the parting pressure. This involves the plotting of input rate versus pressure data and observing the break in linearity of the graph.

6. The analysis of field data indicates that the average depth in an area instead of the absolute well depth from the surface should be used in calculating a parting pressure.

7. Since shooting a well creates horizontal fissures and planes of weakness, the factor of the tensile strength of the formations would be minimized under such conditions.

8. Shooting may be necessary prior to acidizing and squeeze cementing for more efficient well treatment. The same holds true for a water disposal well in order to increase its capacity by the use of high pressures.

9. It is indicated that cemented casing may act as a clamp on a formation, thus minimizing formation parting, and reducing the effectiveness of acidizing and squeeze cementing. If the above is true, consideration might be given to cutting the casing opposite the formation in question prior to treatment in order to reduce the clamping effect.

10. The application of a clamp such as mentioned under 9 or something similar is suggested as a possible method to increase the upper safe pressure limit in the water flooding of low permeability and shallow sands.

11. Pressure parting considerations indicate that for safe operations, especially in a wildcat area where conditions are unknown, casing should be cemented at least to a depth of 0.433 times the total depth of a well as continually as possible during its drilling so as to prevent formation parts from forming higher up in the hole if and when fluid production is encountered. This will prevent possible loss of fluid and cratering.

Acknowledgments

The writers wish to acknowledge with thanks the help given by K. W. Smith, a former member of the research staff and now a member of our armed forces, in gathering some of the field data. Thanks are also due to numerous oil men in the Bradford area who have assisted in taking or who have gathered some of the data given in this discussion. The help received in the numerous discussions with the members of the Petroleum Production Research Laboratory at the Pennsylvania State College is also gratefully acknowledged.

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Improving Oil Conservation Statutes Calls for Diligence

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SINCE postwar planning has been widely discussed, it may be useful to examine the problems which lie ahead in the application of wise conservation measures and to review progress in oil conservation by the producing industry. During the national war emergency period, the Petroleum Administrator for War, under an executive order by the President, has exercised almost complete control over the drilling and producing of oil and gas wells. PAW limits the number of wells to be drilled and more or less determines the amount of oil each state is to produce. The PAW has handled its work of saving steel and material for the military forces in an able manner and at the same time has attempted to apply the best known conservation measures. Under normal conditions, the oil industry's operations are regulated in accordance with the individual conservation statutes of the several oil producing states.

At the end of the war, or perhaps before, the state regulatory organizations again will assume responsibility and supervise the enforcement of laws relative to conservation of oil and gas. A momentous responsibility will be placed upon the industry to cooperate with the states to help provide adequate conservation laws and regulation based on fundamental knowledge and experience. An inspection of the existing state conservation statutes may reveal potential weaknesses which should be corrected to take advantage of the progress which has been made in understanding and managing oil conservation problems. The future prosperity of the oil producing industry depends to a large extent upon the adoption of wise and effective conservation laws in each of the oil-producing states. Solutions will require the cooperation of both the industry and the public. Improved oil and gas conservation plans are being formulated and recommended to the legislative sessions of the several states.

Interest in sane conservation laws is motivated by a desire to eliminate the hazards and uncertainties that accompany the development of oil reservoirs. Probably the four most important objectives which are sought are:

1. To insure laws and rules which will protect the owner of an oil property,
2. To provide for the wisest possible use of the oil resources of the country for future welfare and national defense,
3. To eliminate surface, sub-surface and economic waste,
4. To apply known principles and proven fundamentals concerning oil reservoir behavior.

Petroleum laws have been developed to govern oil producer's relationships and conduct toward one another. Most of the past relationships from the beginning of the oil industry up to a decade ago have been governed by the rule or law of capture which is well known from court decisions. It is a general expression of the rights and obligations of operators in a common source of supply. As is well known, crude petroleum under pressure in a permeable reservoir rock is a migratory substance that will move in the direction of least resistance and toward producing oil wells. The legal profession has classified oil as a mineral "ferae naturae" which, figuratively translated, means "free moving." Oil movement within a common source of supply is no respector of surface boundaries or leases unless it is controlled. As a consequence, it was the common early practice to develop offsetting oil properties, producing under no production restrictions, with the same well density and to protect all common boundary lines between competing leases with the same amount of development. This practice provides a method, which is still being used, of controlling the movement of oil within the reservoir. If a reasonable uniform well spacing pattern is used to develop an entire pool, the respective leases are afforded a fair chance to recover an equitable share of the oil from the pool. This practice should continue in favor for low to medium permeable reservoirs which contain an undersaturated crude oil. Many shallow Illinois basin and Mid-Continent pools, which have initial well capacities varying from 25 to 200 barrels per day and contain undersaturated oil with less than 50 cubic feet of gas dissolved per barrel of oil, are probably being efficiently produced with no production restrictions and reasonable uniform spacing patterns.

Law of Capture

In the past development where small tracts within a pool would be developed to a dense well spacing which was entirely too close and uneconomical for the average lease of the pool, the application of the law of capture principle has discriminated against the prudent and economical operators. It has permitted the abnormally densely developed leases to recover an unproportionately larger share of the pool's oil. The strict interpretation of the law of capture has been attacked for tolerating such conditions. Under the above mentioned circumstances, development policies are dependent upon the wishes of neighboring lease owners rather than on sound business judgment based on the type of oil reservoir being developed and the costs involved for such development.

Although the influence of the law of capture is still potent, it has been modified and additional improvement may be expected. Many states have enacted legislation and promulgated rules to regulate the uniform spacing of oil wells in the interest of conservation. Better management of oil development will result from the regulation of oil well spacing as the oil producer is assured of sound rules to govern his operations. It allows him to make business arrangements with banks and financial institutions without fear of a "line" drilling program developing from competitor operations to deplete his assests and oil reserves. As is now practiced, well spacing programs may be either on a pool or state-wide basis and considerable leeway is provided in most statutes so that a sane development program may be established. Provisions are usually made for a change of well spacing pattern if geological or physical conditions indicate greater ultimate recovery will result.

Small Tract Spacing

Rules and laws to govern the problem of the small tract under well spacing regulations have been successfully treated in many states. Their use has been upheld by the United States Supreme Court rulings and by common acceptance by both the operator and royalty owner. The small tract which cannot meet the well spacing requirements is denied a well. Confiscation of the oil under the small tract is prevented by providing for pooling with adjacent tracts and sharing the production from these tracts upon an equitable basis. Pooling agreements for both the working interests and royalty interests involved in small tracts for assembling the desired spacing unit have probably been successfully used in most oil producing states under PAW regulations such as M-68 and PAO-11. Adequate regulations for pooling the small tracts protect property rights, make development economical and profitable, and prevent the drilling of unnecessary wells.

Most states have laws which protect correlative rights. Protection is afforded the several leasees and leasors within a common source of supply against the extraction and dissipation of a disproportionate part of the oil in the reservoir by one another. The purchasers of crude oil have been made common purchasers of petroleum products so that each lease may have its equitable share of the market available to the pool. In areas where production is restricted due to market conditions, control of reservoir conditions, or other reasons, the ultimate aim of the conservation plans which may be used usually provide that each lease will be given the opportunity currently to produce its equitable share of the allowable from the reservoir. There is little fear on the part of the oil operator today that he will be denied his share of the market or be discriminated against in favor of another operator. Uniform well spacing regulations and reasonable proration methods are important contributions toward protecting the owners'

* Delivered before East Texas AIME Chapter on February 13, 1945, and published with permission of AIME.

rights in an oil property and it is hoped that other contributions will be recalled to your minds for discussion. States also have laws which do not permit dissipation of unduly large amounts of reservoir energy. Gas-oil ratio laws and increased allowables for water return in East Texas are examples. The efforts of the Interstate Oil Compact Commission, ten years old this spring, in fostering uniform and wise conservation statutes in the oil producing states are very worthwhile.

There is sufficient experience on record to provide a wise production plan for every oil producing state. It is suggested that the legislative bodies should provide the following authorities in the oil and gas conservation law of the respective states:

1. Authority to set up drilling units after a study of reservoir conditions, and allow no more wells than are necessary efficiently and economically to drain the oil and, or gas reservoir.
2. Authority to prorate production on the basis of oil and gas reserves attributed to the respective leases in a given pool.
3. Authority to grant voluntary unit operation or to force pooling of working and royalty interests provided conservation of oil and gas will result.
4. Authority to regulate all secondary recovery operations such as repressuring, water-flooding, pressure maintenance and cycling.

Several of the states have laws which provide for the above suggested authorities.

Exploitation of Oil Resources

The war emphasizes the importance of petroleum for the security of national life and prosperity. Petroleum reservoirs contain irreplacable natural resources which must be efficiently produced both profitably for the operator and wisely for the common good of the nation. Due to the public interest in petroleum as evidenced by daily newspaper accounts of oil shortages and rationing of oil products during this trying period with its abnormal demand for petroleum, the industry is committed to efficient regulation and conservation. The use of economical and efficient operating principles is a "must" for the insurance of continued good will and faith in the American petroleum industry by the public.

Utilization of all the petroleum products produced including the oil, the associated gas, and gasoline fractions is most efficient. Arrangements and facilities should be made for collecting and processing all gas produced along with the oil. The residue gas, after gasoline extraction, may be either returned to the reservoir or marketed for utility or chemical industry use. Unless saved, the gaseous fractions would be vented to the air and lost. There are oil producing reservoirs, however, which make little or no gas and, under such circumstances, only the oil is marketable.

The oil operator must gear his philosophy and tempo to take advantage of new scientific and practical developments as they are made. He must incorporate the best in his operating practices and cooperate with the state regulatory bodies and legislatures to promulgate better and more comprehensive conservation measures as the needs arise.

An oil operator's rights are always subject to the legal principle that his actions shall not be injurious to the rights of the general public or to the rights of other operators. Legislation which affects the public welfare such as oil conservation statutes are subject to the police power of the respective states. Police power derives its existence from the rule that the general welfare and safety of the people are the supreme law. From this it follows that the prudent oil operator is afforded the protection of the courts if he operates his leases within the law.

Some of the earliest conservation laws were based on eliminating waste which might occur on account of improperly plugged oil wells. Public interest was sufficient to promulgate legislation in almost every oil producing state for regulating the plugging and abandoning of wells. As more information developed concerning the behavior of oil reservoirs, legislation to reduce all forms of possible waste has been enacted by the states to conserve oil resources for present and future use. The records reflect that waste prevention statutes at times, to be effective, curtail the production of oil. This type of statute has been attacked repeatedly in the past because it was contended that the real purpose was to regulate the price of crude oil and its products. The courts have reviewed many different and difficult cases which show the conflict between legislative and economic laws. The general trend of the decisions recognized that the field of economic law may have been invaded, to some extent, but it has usually been held that this does not justify the voidance of the waste conservation statutes.

Many of the conservation statutes have recognized the primary function of gas in the production of oil and its complete utilization without waste is attempted to be safeguarded. Based on this growing recognition that the gas associated with crude oil provides propulsive energy to produce the oil, the use of gas has been restricted in the form of maximum gas-oil ratios and credit is sometimes given for returning gas to the oil producing horizon. Many of the above mentioned regulations were promoted to preserve and insure the general prosperity of the citizens. It may be stated that, as a correlary, these actions have conserved the oil resources for national defense.

Elimination of Waste

All concerned are interested in the conservation of the irreplacable oil and gas deposits and in their production without surface, sub-surface or economic waste. Conservation properly applied reduces development costs and eliminates waste of oil, gas, gas energy, and other forms of reservoir energy which are associated or combined with the oil in the underground reservoirs. The industry is firmly committeed against any policy or practice which allows the skimming of the cream off flush pools and unreasonable waste of gas which might leave recoverable oil in the reservoir that could not be produced economically.

Surface waste of oil has been abhored since the beginning of the industry as every oil operator knows he cannot sell a lost product. Early records of flush pools which tell of surface waste from oil storage in earthen pits and dammed up creek channels which leaked or were damaged by rains are the exception rather than the rule. The industry pioneered the use of vacuum and pressure-type storage tanks to save and retain the lighter gasoline fractions in the crude oil. Statistics reflect that the modern oil field storage tanks save approximately three percent of the crude oil produced by retaining the lighter crude petroleum fractions in solution. Based on the United States annual production of approximately 1,680,000,000 barrels for 1944, the oil savings amounts to approximately 50 million barrels.

Careful operation of oil pools which contain large gas caps above the oil in the crestal portion of the structure has reduced underground waste to a minimum. By either, or both, well completion practice and return of gas to the gas bearing zone of the formation, the pressure of the gas zone is maintained equal to, or slightly above, the pressure in the oil bearing zone of the formation. These practices prevent migration of oil into the gas zone to be partly adsorbed and probably lost to recovery by known producing methods. It is common practice today for wells producing from this type of reservoir to have the well casing cemented completely through the oil and gas bearing zones. The well is opened to production by selectively perforating the casing opposite the oil bearing zone and the gas within the gas cap is retained in the reservoir.

Great progress is being made in reducing economic waste by the application of uniform well spacing regulations. The use of the proper spacing unit is also being given much consideration, and its determination is a matter of concern. Selection of the spacing unit is dependent upon many factors which can best be judged by the operators who know local conditions. Reservoir conditions are known which favor 40-acre or larger spacing units while there are other types of reservoirs that are more suitable to smaller spacing units. It is quite likely that information being assembled today from some oil reservoirs developed on 40-acre spacing patterns due to steel shortages, will justify infilling development. Intensification of well density for pools with low reservoir permeability may be required to efficienty exploit the reservoirs.

The important principles which govern the behavior of oil reservoirs are relatively simple and easily understood. However, like so many other things, their application to a particular reservoir problem can be exceedingly complicated. The oil producer has enlisted the help of chemists, physicists, and scientists to help him unravel some of the more complex problems. There are times when, even with the best practice, it is impossible to make satisfactory well completions which will allow selective oil production and retain the gas in the reservoir. This type of trouble is particularly prevalent for reservoirs which have an oil zone of small thickness in direct contact with a permeable gas zone.

Actual field recovery data and small scale laboratory experiments give evidence that water displacement of the oil from a reservoir rock will yield the maximum amount of oil recovery. Reservoirs with sufficient permeability and interconnection with large bodies of water surrounding the oil bearing portion will yield a very large percentage of the original oil-in-place before depletion by natural methods. As far as the author knows, there is no method

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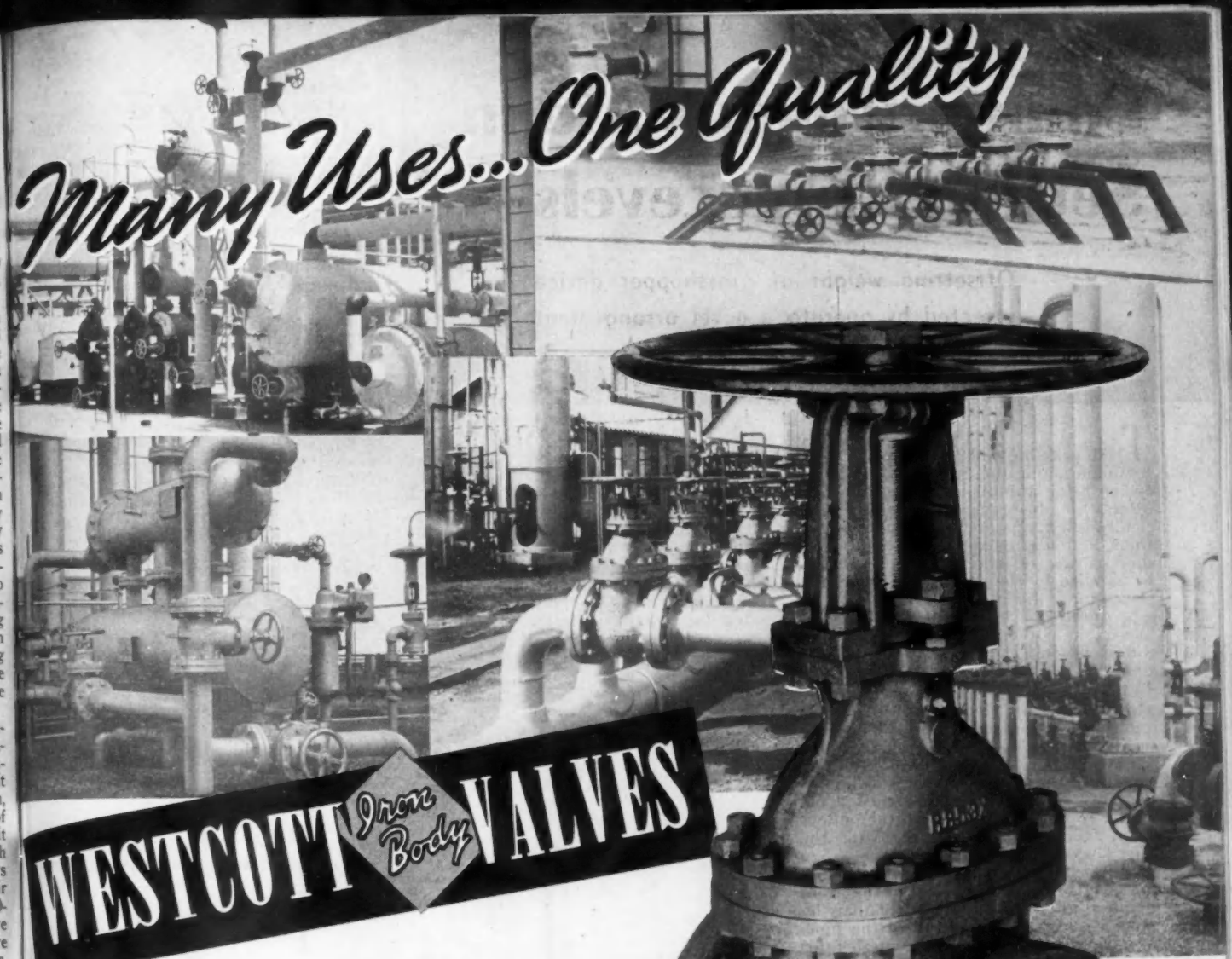
Many Uses... One Quality



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CONTINENTAL

SERVING THE OIL AND GAS INDUSTRIES

Counterweights Aid in Setting Brine Levels

Offsetting weight of grasshopper device effected by operator's novel arrangement

By ELTON STERRETT, Staff Writer

THE grasshopper leg type of siphon for maintaining the desired interface between brine and oil in the settling tank offers the advantage of presenting practically full range of tank height for settings, but carries with it the disadvantage of greatly increasing the weight to be handled by the switcher or tank farm attendant if he must move one of the pipe drains if it be far from the vertical, due to the combined weight of pipe and water up to the break-point of the siphon.

One operator, having production which yields approximately 10 percent crude and 90 percent brine in an emulsion which breaks down readily upon the application of heat, equips the drain leg from the gunbarrel with counterweights, utilizing the feed line from treater to tank as support for the pulleys over which the lines controlling the paired counterweights are run. The hoisting line is attached, with clamp and swivel eye, to the swing of the drain member, and the lift so aligned that the tension is offset to the pull of the pipe, even when raised to maximum height. By varying the weight to give easiest setting, it is possible to offset the weight of the grasshopper device sufficiently that the outlet leg can be moved readily to the desired notch in the setting guide in the overflow flume, yet will have sufficient weight to maintain the setting, once made, against wind stress and vibration of intermittent flow.

Counterweight Reduces Wear

Use of the counterweight also relieves the threaded connection at the water drain of the tank from much of the wear which it normally sustains when the entire weight of the filled section of the grasshopper leg is borne on it. It also relieves the valve and tank outlet flange of much of the eccentric loading which normal construction throws on them, and thus makes for longer life of both units.

This same operator, once he has separated the brine from his crude, runs it to a storage pit from which it eventually finds its way to a salt-water return system. The use of the storage pit permits the skimming of any residual oil which may bypass the treater and gunbarrel tank, and also eliminates, at least during the summer months, a sizeable percentage of the brine produced.

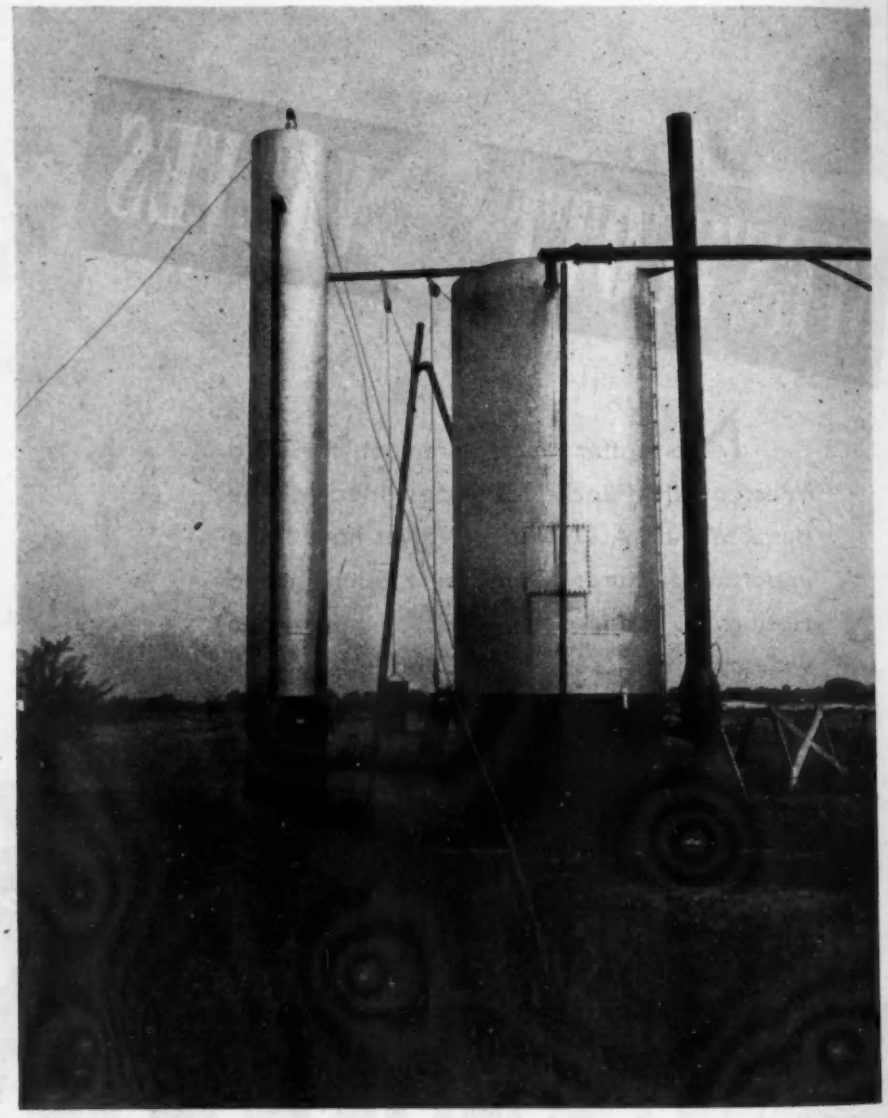
Scrap pipe was first used to convey the brine from the grasshopper-leg discharge flume to the pit, but the maintenance of the 600 feet of pipe was a never-ending chore, due to the thorough aerating which the brine obtained as it emerged from the drop leg and entered the pipe.

To replace the rapidly corroded pipe, a timber, flume was constructed to span the gap between tank and pit, the flume having a 2x12-inch timber base section, to the side of which 1x10-inch boards were nailed with double-coated galvanized nails. The lumber used for sides was rough, while that of the base was dressed only along the edges. The resulting assembly gave contact between a smooth surface and one which, by reason of saw marks and grain, was relatively rough, the action of the brine tending to swell the rough lumber and seal off the joint so that, after just a short run, leakage was controlled.

The bottom and side members were abutted squarely, being held in place with wide cleats, double nailed with the galvanized fasteners, and with the ends clinched on the inside and driven well back into the wood. Swelling of the timber seemed to protect the metal against corrosion sufficiently for one set of fastenings to outlast the useful life of the timber.

Flume Protection

Supports for the flume were cross braced at intervals to prevent lateral vibration and possible opening of joints, the legs being sloped outward sufficiently to afford adequate bracing against winds or lateral displacement. Since the weight per foot, even when carrying maximum outflow of brine from the treating units, was relatively low, the only footing required under the flume was placing sufficient supporting area



The flow line between heater and treating tank is utilized as support for this pair of pulleys, each carrying line and counterweight which takes up most of the weight of the grasshopper leg siphon on each of the treating units. With counterweights, one man can easily regulate break-point level and maintain best operating conditions with minimum oil loss.

This timber flume, extending from settling tank to salt-water disposal pit, replaces rapidly-corroded (junk) pipe line, and at the same time adds effectively to the percentage evaporated during transit—by just that much lightening the load on the salt-water disposal system of the field. The elevated flume keeps brine out of reach of stock grazing between treating units and fenced-in pit.

to prevent downward displacement during wet weather.

Another operator in the same general area, observing the benefits which the flume offered his neighbor, likewise disposed of his brine production through a flume, built similar to the one shown, but with the inside protected, before initial flow, with a brushed-on coating of hot pipe-line enamel. This coating effectively sealed the seams and permitted farming of the entire area under the flume without danger of loss through brine drippings while the timber became wetted or in case a period of disuse allowed the seams to open and rainwater to flush the sand deposits from the sides of the timbers.

Where evaporation is relied upon to remove at least a portion of the brine flow, use of the flume is found to give even greater reduction of volume than is the open pit, due to the fact that the flowing stream is agitated and comes much more intimately into contact with the warm air than does the relatively still surface of the pond.

Conservation Statutes

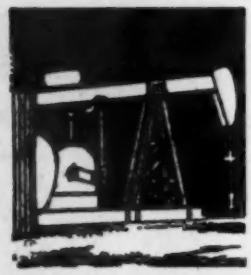
■ CONTINUED FROM PAGE 50

known which will increase the native potential water energy of an oil reservoir except by reinjecting produced water or extraneous water into the reservoir. Utilization of the water drive energy can only be accomplished by removing fluid from the reservoir and the withdrawal rate may be or may not effect the efficiency of the water drive.

For reservoirs of low to medium permeability and with little or no gas dissolved in the oil and no gas cap, withdrawal rates may be adjusted to the market demand without lowering the producing efficiency for the reservoir. There are other circumstances which demand different attention such as medium to high permeable reservoir conditions with moderately high-pressure formations which contain a large amount of dissolved gas in solution in the oil. If rates of production are restricted so that the water drive energy maintains reservoir pressures near original conditions, the dissolved gas is retained in solution. Under such operations it is reasonable to expect the residual oil content of the reservoir at depletion to contain less tank oil due to the large amount of dissolved gas and, as a result, the over-all recovery is dependent upon the original dissolved gas content of the oil. Lower rates of withdrawal from such reservoirs may also reduce the possibility of trapping oil by water encroachment and the determination of the proper rate can be made only after studying the individual reservoir conditions and performances.

The reservoir energy may be supplemented by the injection of gas or water and under proper circumstances and control, this practice leads to increased oil recovery. Supplementing of reservoir energy is a growing practice and improved recovery is resulting from pressure maintenance, cycling in distillate reservoirs, flank water injection, pattern water flooding, and gas or air repressuring of settled producing leases. Under the proper economic incentive there are many pools from which the oil recovery will be increased by supplementing reservoir energy. However, not all reservoirs require the return of gas or water for efficient operation. Many of the more permeable reservoirs may never need to have the natural formation energy supplemented.

It is difficult to generalize on oil conservation problems which, by their various nature, resolve themselves almost immediately to specific examples. Papers of this type may be justified if they are able to foster continued interest in developing and maintaining high standards of conservation in the industry. The historical review indicated much progress in conservation and the petroleum industry deserves the wholehearted support of government and the public for their efforts. Our responsibility and future welfare call for diligent attempts at all times to improve the oil conservation statutes of the oil-producing states.



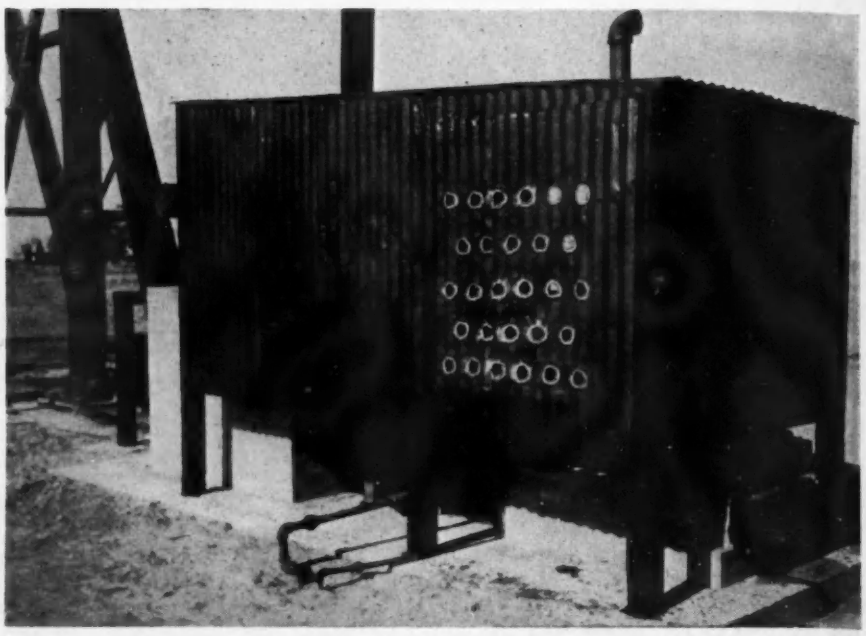
OPERATING HINTS *For Production Men*

Unit Enclosure Guards Engine and Gear Box

PUMPING UNITS

The extent to which a minimum quantity of materials may be utilized in constructing an efficient pumping unit base and housing is well illustrated in the type of installations currently being used by one company in routine completions of a number of shallow wells. Prime mover of the unit is an upright 2-cylinder engine, which, together with the gear-reduction unit, is mounted on a specially designed concrete slab of an overall area just sufficient to permit erecting several wooden posts to support a light corrugated iron housing over the engine and gear-box units.

While the engine side of the enclosure is an integral part, it has the unique feature of having a large square doorway which can be adjusted according to the weather or temperature prevailing outside. The radiator of the engine "looks" out on the other side of the enclosure and is enclosed also, except for the actual cooling surface which is exposed to the atmosphere.



Open only across the face of the radiator, this housing conserves engine heat, the holes through door section providing sufficient draft for cooling unit during periods of severe weather.

During cold days, torch-cut holes cut in the siding of the door will always admit ample ventilation or draft for the radiator fan, but for the warmer summer seasons, the entire door may be opened up, thus giving the pumper the advantage of regulating temperatures during all types of weather, plus the desirability of having the equipment entirely under cover. Access to the interior by the pumper for servicing the engine is gained by another smaller door at the end of the structure, the brake lever being located handily just beside the door on the outside.

Sliding Bin Provides Added Working Area

SERVICING TRUCKS

The amount of carrying capacity of the field service truck is extended by one company through the relatively simple expedient of adding sliding drawers within dustproof housings built under the body behind the driving wheels. The drawers, made to pull out to the side, are covered with a lid which lifts off to expose the contents, or which may be kept in place to provide extension working area for light repairs.

The drawer is carried on a pair of cleats along the tops of the sides, which match with similar cleats carried on drop brackets bolted to the under side of the truck bed. If the cover is made with deep flanges, the offset on the supporting cleats must be made wide enough to afford clearance for this as well, and should preferably have drain openings so that water or mud will have a chance to drain off, rather than collect and possibly jam the sliding ways.

Material carried in these drawers is protected against damage from heavier and more bulky parts loaded on the

The sliding drawer, mounted behind drive wheel, adds carrying space and serves as extended support.

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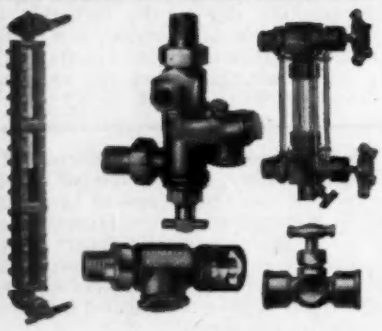

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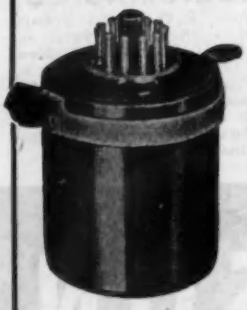

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truck bed, and may be so wrapped or packed in the carrying space that finished outer surfaces are not injured.

A hasp and padlock provide for retaining the drawer in the closed position while on the road, and protect the contents against pilfering.

Emergency Dump Bailer Speeds Plug-Back Job

WELL WORK-OVERS

When one operator found it necessary to run cement on a plug-back job he had no bailer available which would do the job. Rather than mark time until the required piece of equipment could be sought out, he took an old dart and cut off the end to make a square face. Into this end he babbitted in place a metal fruit-jar ring, with the open side of the thread downward.

A common glass jar was then screwed into the retainer thus formed, effectively closing off the end of the tube formed by dart and jar. The unit was then carefully lowered down the hole until the top of the dart was level with the floor, and then filled with cement.

A jar top, babbitted inside dart, supports this breakable cement retaining and releasing device.

The bailer was lowered to bottom, being set down hard enough to shatter the jar, releasing the cement, which flowed out to fill the bottom of the hole to the calculated height. A second batch of cement may be run while the first is still soft, simply by screwing a second jar into place and smashing it as was its predecessor.

If no regular equipment is available for converting to bailer, a joint of pipe, with the jar ring made into its bottom as outlined, and with a bail welded at the top, will perform as satisfactorily. Use of the pipe permits a second joint to be added to give greater capacity than would be available in a single piece of pipe, when more cement is required down the hole for the plug-back.

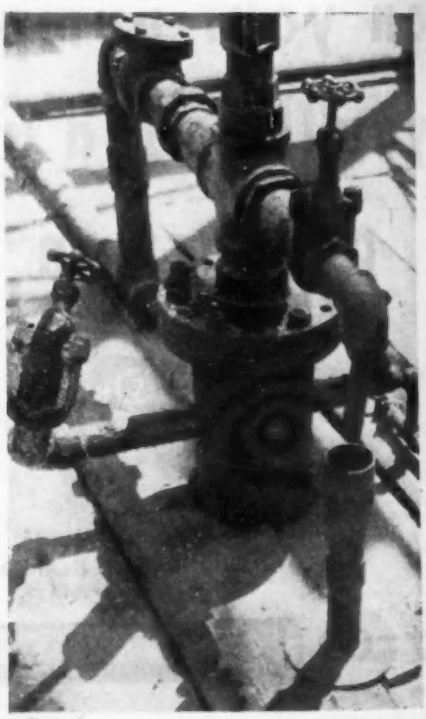
$5.00 is paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, P. O. Box 2608, Houston 1, Texas

Sampling Drain Improves Well-Head Appearance

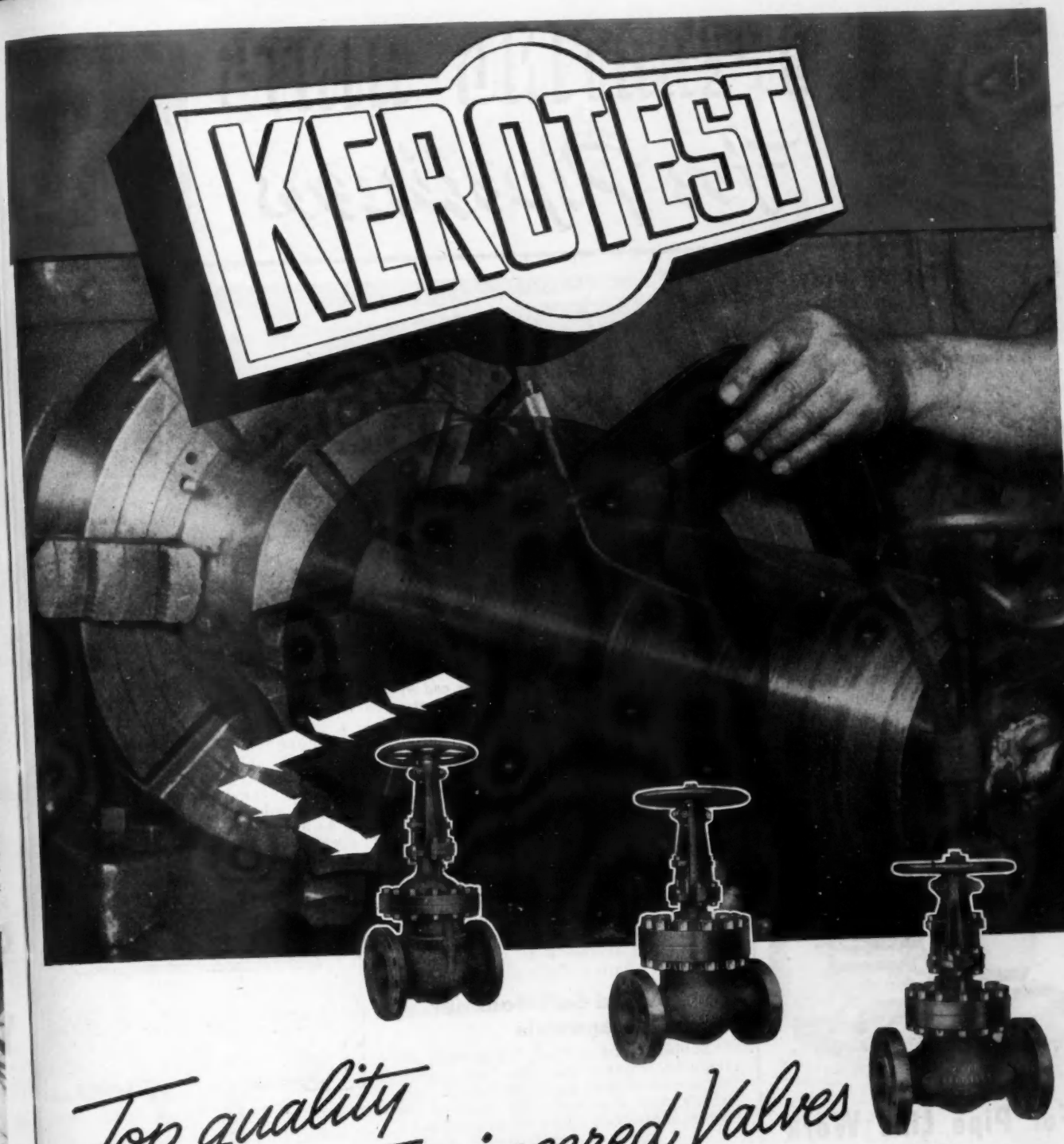
WASTE OIL REMOVAL

A common sight at the average pumping well is the puddle of oil which accumulates around the pumping head due to drippings resulting from the pumper filling his sample cans for testing the general pumping characteristics of the well. One production foreman eliminates much of this unsightliness by providing a funnel device below the sample cock, which projects down through the cellar flooring so fluid will be conducted on into the cellar.

A flat disk was welded to the body of an 18-inch length of 2-inch pipe in the manner shown and then stood up in the round opening previously cut in the flooring. A collar and a 2- to 3-inch swage fitted to the top of it provides a wide mouth for funneling overflow or splattering. The small cost of the welding involved plus the salvaged materials used are more than compensated for in the lessened cleaning up and maintenance involved, to say nothing of the fire hazard eliminated.



Funnel mounted on drain extending through well flooring carries away drip from sampling line nipple.



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OPERATING HINTS *For Pipeliners*

Extension Stem Guide Provides Valve Lock

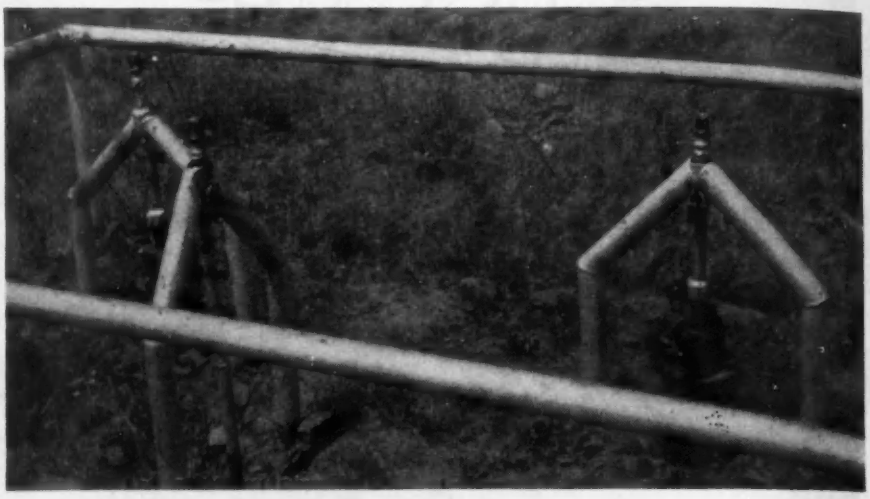
Frequently incoming lines are so connected to the station network that block gates must be located outside the station enclosure, and as such are exposed to the threat of tampering, either malicious or mischievous, with consequent derangement of station flow schedules and, occasionally, even serious damage to equipment.

MANIFOLD PROTECTION

One station, located close to a main highway, protects its isolated block gates with an ingenious pipe yoke which effectively prevents unauthorized turning of the valve stem. To the main pipe, on either side of the flanges carrying the gate, risers of 2-inch pipe are welded. At a suitable distance aboveground, sloping pipe sections are welded to the uprights, so as to meet at a point some 10 or 12 inches above the stem of the gate.

Through the bearing thus formed a sucker-rod extension is placed, the socket at its lower end fitting over the square on the valve stem. A second square, above the support, provides for attaching a hand wheel for manipulating the gate. Through the body of the pipe yoke and the extension rod matching slots are cut, so that a headed drift pin can be put through the unit to prevent turning. A padlock through a hole in the end of the pin retains it in place unless intentionally released.

Where the valve is entirely buried, the locking extension is carried to the stem, and a section of slightly larger pipe set around the extension to provide clearance for rotating the unit.



Risers, carried to buried pipe line and welded on to flank valve flanges, carry arched yoke through which stem extension projects with matching slots for headed key and lock.

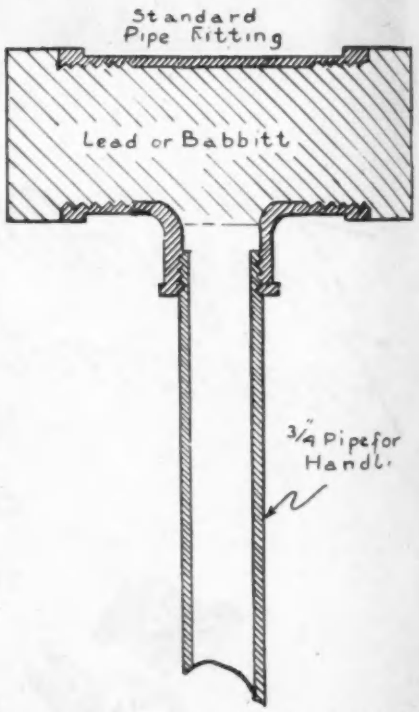
Improvised Soft Hammer Permits Renewals

Babbitt-faced or "soft" hammers are required around the pipe line station, but are now listed among the many tools which must wait until after the war for ready acquisition. The engineer who really needs such a tool now, however, can equip the station with little trouble and expense other than the babbitt required.

HAND TOOL EQUIPMENT

All that is required is a malleable pipe tee of the size required for the type hammer needed. The handle is fashioned from any pipe scrap handy. Before pouring the babbitt the end of the handle must be plugged with clay, asbestos, or putty and the tee must have extensions built up for ½-inch beyond the ends. This is done by wrapping strips of light metal in a band about the ends. With this done the handle is supported so that it is level. The edge of the metal band where it meets the level of the work bench is sealed with putty or asbestos, and the job is ready for the pour.

As a safety precaution be sure that no grease, oil or water is present in the mould since it may cause disastrous explosions of hot metal due to the vapor or gases formed. Test the heating babbitt



Pipe tee and nipple form basis or mold for containing babbitt or lead head for spark-proof hammer.

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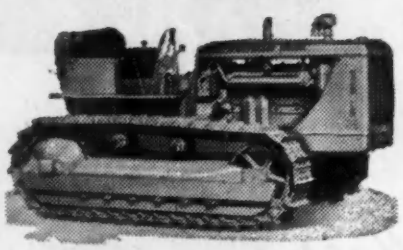
CATERPILLAR TRACTORS



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with a stick. If it adheres to the stick it is not hot enough; continue heating until the stick shows a tendency to char. In any event wear gloves and goggles.

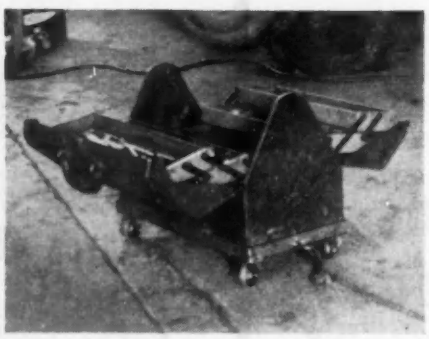
As the hammer wears down to the point where the iron is exposed a few minutes with a blow torch will run the old babbit out and new casting can be run in the same frame.

Tool Box Caster Frame Speeds Overhaul Jobs

EXPEDITING MAINTENANCE

The tool box in which most of the hand tools and small replacement parts usually are carried to the job speedily becomes so filled with odds and ends that it is quite a chore to move it from job to job, either in the station or in the company garage.

One mechanic took four short pieces of angle iron, welded them to form a rectangle into which the box nested closely, and placed swivelling casters at the four corners. Then, with a string attached to an eye welded to one of the short members



Angle-iron frame to fit tool box and four swiveling casters help this kit roll over the floor.

of the rectangle, he had a self-supporting box which could easily be wheeled across the floor to the job, simplifying selection of the required tool or replacement part.

Since the tool box is simply rested within the angle-iron rectangle, it may be removed when the box is to be taken in the service truck for a field repair.

Truck Platform Guard Prevents Floor Damage

TRANSPORT BETTERMENT

No part of the oil field truck takes more abuse or is subject to more wear than the rear edge of the truck bed. Pipe and other heavy objects that are usually slid off the truck from the rear cause the wooden floor boards to break down at the ends if not protected by some means.

A simple and inexpensive steel protector like the one illustrated can be made by a welder from a piece of used 6-inch casing plus a few odd pieces of steel plate. The casing is first cut to a length equal to the width of the truck bed and then split down the middle into two equal pieces. The half casing is then cupped around the wooden ends of the truck floor boards and either bolted or welded in place. Flat plates are then cut to fit the

Casing, split and rewelded over truck bed end, takes brunt of loading wear and saves platform.

ends of the half casing and to conform with the truck bed itself. These plates are then firmly welded in place. Rough edges can be ground off making a neat finish to the job.

The owner of several trucks protected this way reports that his fleet handles rough oil field equipment every day and that he finds the casing protectors satisfactory in every way.

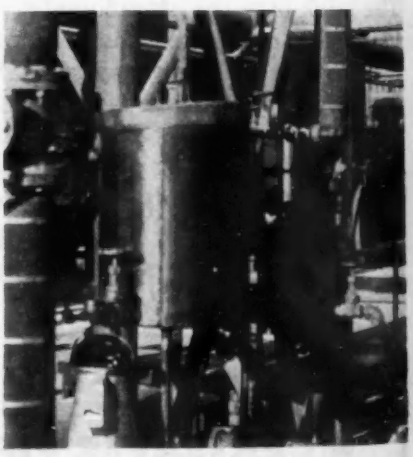
Lubricant Heater Aids Transfer from Storage

OILING SPEED-UP

A small supply of steam cylinder oil, warmed to the proper temperature to insure ready flowing, has been obtained at one steam-powered pump station by setting up a 20-gallon cylindrical tank close to the drain from the steam trap used to remove condensation from the main header between boilers and pumps.

Inside this small tank is set a coil of pipe, connected at one end to the efflux from the steam trap, and venting to a drain and open only under atmospheric pressure at the other.

The hot water ejected by the trap flows through this coil, effectively heating the cylinder oil within the tank and in close contact to the pipe. Since the water is never hotter than 212 degrees, it is impossible to raise the temperature of the oil in the storage tank high enough to impair its original qualities.



This tank is heated by drainage from steam line trap, and maintains oil in flowing condition.

Work and Safety Aided By Improved Covering

Many older types of drawworks improved by shop-made cover inclosing all chains. Catline guides installed

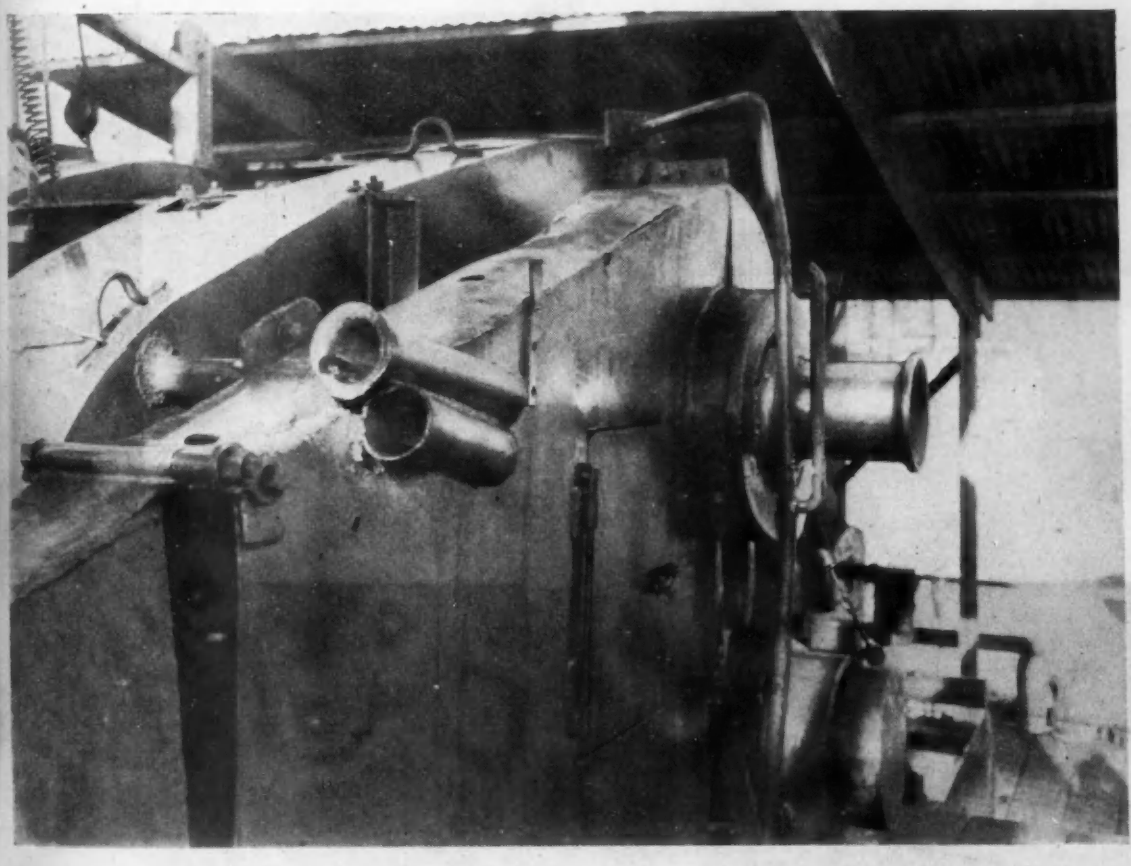
ADMITTING the numerous advantages and enhanced safety of the newer, all enclosed drawworks, one is apt to overlook the possibility that there is considerable room for improvement and modernization of many of the older types. As shown in the accompanying illustration, one operator effected a number of small shop-made improvements on his drawworks that have been contributing considerably to the safety as well as easing the tasks of workmen on the derrick floor. All sprockets and chains were fully enclosed, and to facilitate access to the interior for lubrication and inspection purposes, small doorways and hand-holes were cut into the all-welded enclosures. In addition, catline guides were installed which simplify and make safer that phase of the work.

The outer end of the rotary table chain drive cover was hinged at the upper edge to permit raising it for working on the chain. The hinge consists of two side pieces taken from a rotary chain link together with a long bolt run through a short piece of pipe welded to the housing. To make the use of the cat-line a safer and quicker operation, a short length of 3-inch pipe, belled out at each end, was welded to the side of the housing just forward of the cathead to serve as a guide for the catline, preventing the latter from becoming entangled in the drawworks or rotary table and at the same time holding the loose end in a handy position so the cat-head man can grasp it quickly. A shorter piece of pipe was welded below this belled guide piece to lend support and strength without having to resort to a complicated type of bracing. Another cat-line guide was installed off to the other side of the cat-head. It consists of a heavy rod mounted upright on the floor, extending vertically to a point well above the cat-head, then turning and running horizontally over to be attached to a steel bracket atop the drawworks. A small elongated bracket welded to the side of this upright member forms a convenient guide, and also line rest similar to the other 3-inch pipe guide, for other uses on the derrick floor for which the regular cat-line may not be suitable or available at the time.

Cat-Head Made Non-Fouling

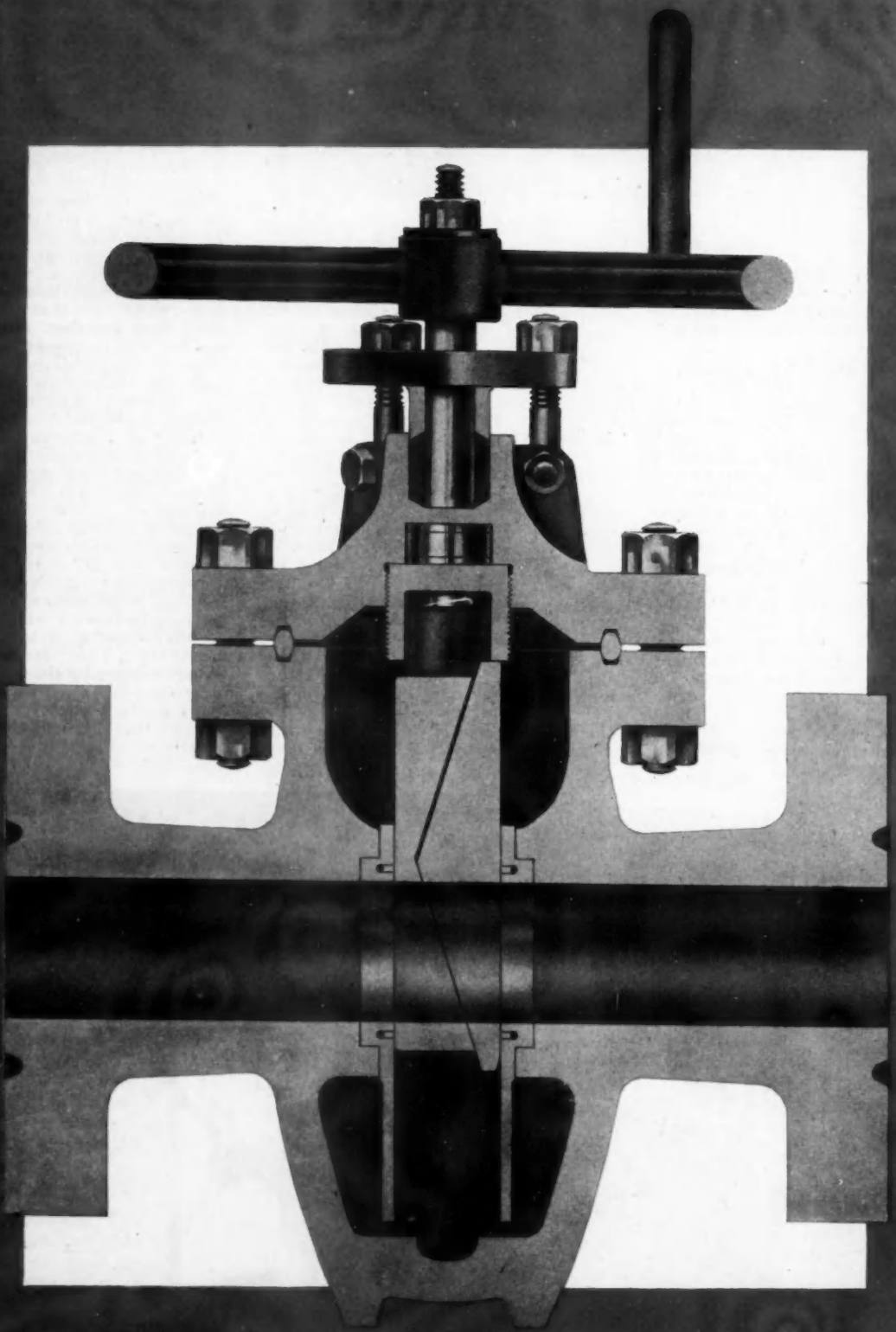
Another improvement that was made when steel housing was installed over the equipment is a short projection of the sheeting forming a shallow hub extending out to and just over the center of the inner rim of the cat-head. This vital point has been the cause of many accidents on the derrick floor, the catline often rolling over the rim of the head to become entangled on the shaft and drawing the cat-head man into the turning coil before he can break loose or free the line. The existing set-up allows for freedom of action in operating the line, there is ample clearance for the cat-head rim, yet there exists no danger of any entanglement of the line. In addition to this enclosure, all open axle and shaft ends were covered with "pans" of sheet iron to protect them from weather, mud splashes and possible entanglement with loose lines or workmen's clothing.

Despite the completeness with which the drawworks is covered with sheeting, it quickly can be removed if necessary. Sections of the housing are flanged to each other and assembled with a minimum of bolts to permit rapid dissembling. Short stulls of 2-inch pipe, one end welded to one side of the housing, the other bolted, hold the major housing sections apart and keep them from sagging over to either side to ride on the sprockets or chains. On the top side of major pieces are welded steel loops or bails with which the units may be lifted clear by a sand line following dissembly. The increased efficiency brought about by these simple improvements has been instrumental in streamlining rig activities far out of proportion to the original small cost of the installation.



Reworking the old drawworks, with the addition of enclosures which not only save lubricant but also prevent accidents, makes a streamlined job of this unit. The front end of the rotary chain guard is hinged to provide access to chain and sprocket, while nonfouling guard around cat-head speeds work with the line and prevents snarled or snagged line.

W.K.M GATE VALVES



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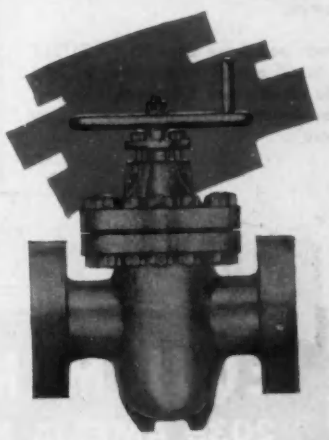
THE INDUSTRY'S FIRST 15,000 LB. TEST GATE VALVE

W-K-M 15,000 Lb. Test Through Conduit Gate Valves are now in service on an O-C-T 15,000 Lb. test Christmas tree manifold installed in the Chocolate Bayou Field, Brazoria County, Texas.



Precautions Pay Off in Use of Slings

SLINGS are widely used at the rig and in the station for transferring bulky objects, either with the overhead crane, elevated chain hoist, or in connection with the winch line and shear legs of the material-handling truck. Many accidents to personnel and much damage to equipment results from improper handling of the slings or the use of slings which have worn or been abused beyond the point of safety. Careful inspection of this item of equipment, as with other and operating units, will pay dividends not only in reduced damage, but also frequently in more expeditious handling of loads.

Writing in the *Construction Safety News Letter* issued periodically by the Division of Safety and Hygiene, Industrial Commission of Ohio, Harry L. Sain, superintendent, has this to say about the care of slings:

"The method of attaching the slings to the load and to the hook of the hoisting cable is of great importance. The use and care of slings should be entrusted only to experienced and responsible persons.

"Wire cables, chains, and manila rope are all used for slings, their relative strength for similar diameter varying in the order named. For many reasons, aside from its strength, a wire cable sling is to be preferred to a chain or to a fibre rope of any kind and should be used whenever possible. Ordinarily, deterioration is easily detected in cables, as it is commonly indicated by broken strands that are readily discoverable by an experienced and qualified inspector. Chains, on the other hand, may sometimes be used almost up to the moment of a failure with no external evidence of weakness other than the existence of a few seemingly unimportant bruises. A careful microscopic examination, nevertheless, will often disclose a multitude of small cracks, showing that the metal has become fatigued by the heavy loads that have been lifted.

"Wire cable slings, on account of their pliability, are often bent at very sharp angles, not only while being adjusted to their loads but also when they are under strain. Sharp bends of this kind should always be carefully avoided, because the excessive bending stresses that they cause in the cable affect the inner wires. The continued twisting and untwisting of sling cables dragging on the ground, and chafing against loads are responsible for surface wear and damage to the outer wires.

"To prevent sharp bends, strips of wood such as lagging, should be placed between the slings and the corners of the load. This will also prevent chafing of the cables and bending of the chain links in the case of a chain sling. This wood lagging should also be used when slinging any load that is likely to slip, such as cast iron pipe."

Now a 5½" x 2½" TUBING CATCHER FOR YOUR 10,000 FT. WELLS

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Look at the greater gripping area of the DOUBLE E 5½" x 2½" Three-Step Tubing Catcher in the picture. Note the large by-pass areas, and the general rugged construction. These are several of the improved features of DOUBLE E which provide you with greater protection against falling tubing, wedged catchers, and damaged casing. In fact, it has over twice the slip area of any other catcher.

An anchor attachment is included to increase the efficiency of deep pumping wells, functioning with either hydraulic or rod operator pumps.

Once you have used the DOUBLE E, you'll always be grateful we told you about them. Obtainable at prewar prices through your supply store.

"DOUBLE E" Products

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Petroleum Fleets Rate High in Safety Contest

Two petroleum company fleets lead the field at the halfway mark in the national fleet safety contest conducted by National Safety Council. Competing against fleets of all types—from taxicabs to inter-city trucks—Magnolia Petroleum Company of Dallas rolled its truck fleet a total of 1,233,000 miles without a reportable accident between July 1 and December 31, 1944. Second place went to the passenger car fleet of the Socony-Vacuum Company, Inc., Albany Division, New York, with 1,091,000 miles of operation without a reportable accident.

ePtroleum truck fleets generally rated very high in the first six months of the safety contest. The Magnolia fleet, of course, topped the contest for large fleets. The leader among the smaller petroleum truck fleets is the Shell Pipe Line Corporation, Houston.

In the passenger car fleet contest, the Socony-Vacuum fleet led the eastern area in Group 1 (largest fleets), while Shell Oil's North Products Pipe Line in New York led in Group 4 (smallest fleets). In the western area, Magnolia's Northern Division passenger fleet lead Group 1, while The Atlantic Refining's Atlantic Pipe Line Company fleet and Ajax Pipe Line Corporation of Tulsa lead in Groups 2 and 3 respectively.

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GATES *Synthetic Rubber* V-Belts

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To meet the unprecedented severity of combat service on U. S. Army tanks, tractors and self-propelled big guns, Gates has developed and built synthetic rubber V-belts to far higher service standards than were ever required of pre-war, natural rubber V-belts!

- **The importance of this fact to industrial V-belt users is this:**

  Every improvement developed by Gates for these Army V-belts has also been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.

In the case of many other products, you must wait until after the war to get the benefit of war-time improvements. But victory depends upon production—and production depends upon V-belts which drive the producing machines. That is why Gates has been able to pass on to you immediately, in your Standard Gates Vulco Ropes, every V-belt improvement which Gates specialized research has developed for use in the Army's motorized equipment.

In addition, where V-belts of special construction are required your Gates Rubber Engineer can supply a Gates V-belt that is precisely engineered to meet your special needs. Whenever you have a drive problem or a V-belt problem, just pick up your telephone directory and look under the heading "Gates Rubber." The Gates Rubber Engineer will bring right into your plant the full benefits of every advance in V-belt construction that Gates specialized research has developed.

—and one of these 5 GATES V-belts will meet any Special need you may have.

- Rayon Cord V-Belts
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February Exploration

• CONTINUED FROM PAGE 32

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coveries of new fields and new pay horizons show an increase of 25 percent over last year, considering oil, distillate, and gas finds. As compared with last year, discoveries of both oil and gas show important increases, although gas discoveries are off.

Total oil discoveries (new fields and new pays) have been 26.6 percent higher than last year, with fields separately showing a 30 percent increase and new pays a 19 percent gain. Gas discoveries are up 50 percent, with that same gain shown for both new fields and new pays. Distillate discoveries are off by several strikes, fewer new fields having been found.

Major Extensions, Too

While new fields and new pay horizons are being found in larger numbers this year than last year, major extensions to established fields also are being proved up in greater numbers. For January-February, 1945, extensions totaling 24 are herewith recorded, against 13 in the like period last year. These figures largely represent oil field extensions, which increased to 22 from 10.

States and districts which show noteworthy increases in exploratory drilling this year include both North and South Louisiana, Mississippi, Oklahoma, Wyoming, West Texas, and the upper Gulf Coast of Texas. Areas which show outstanding gains in successful tests include Kansas, South Louisiana, Oklahoma, North Texas, and the upper Gulf Coast of Texas.

Texas played its usual prominent role in wildcatting in February, having accounted for more than a third of U. S. exploratory completions and for a similar proportion of successful tests. Kansas, Oklahoma, and Illinois also continued large in the exploration picture, in both volume of drilling and successful completions. California, Michigan, and New Mexico were relatively active but showed poor results.

Out of 12 exploratory completions, California failed to show a pay-off. Colorado, Montana and Wyoming reported only dry holes, Michigan gained only an oil field extension out of 15 tests. In Illinois 23 completions netted 1 new oil field, 2 new oil pay zones, and 5 oil field extensions of ¾ to 1 mile. Indiana and Kentucky had no discoveries.

Kansas had 34 exploratory completions, of which 6 opened oil fields, 1 a gas field, and 1 extended an oil field. Some of these new Kansas fields appeared fairly important. They were in Barton, Douglas, Ellis, Graham, Rush, and Trego counties. Oklahoma's 29 reported exploratory completions provided 9 oil fields, 1 new oil pay, 2 oil field extensions, and 1 new gas pay. These finds included apparently important new fields in Bryan, Garfield, Stephens, Payne, and Pontotoc counties. New pays were at Northwest Hoover and West Edmond, and fields extended were Pauls Valley and Lovell.

Arkansas gained no new reserves from 6 wildcats. The same number of tests in North Louisiana yielded a new gas field and an oil field extension. South Louisiana had a record of success, as 8 completions netted 2 oil fields, 1 new oil pay, 2 distillate pays, and 1 oil field extension. Mississippi reported 8 wildcat completions, all dry. New Mexico's 8 completions included 1 that discovered a new oil field in Lea County.

Texas Record

In Texas there were 126 exploratory well completions, of which 24 were productive—a little less than 1 out of 5. The single productive test in eastern Texas out of 9 opened a gas-distillate field in Freestone County 3 miles southwest of Fairfield, which is expected to be developed commercially for gas. Twenty-four completions in North Texas afforded 2 small new oil fields in Jack and Throckmorton counties and a new pay in a Young County oil field. West Central Texas gained only a gas producing area of limited importance out of 11 exploratory completions. West Texas had 26 completions that proved only a small oil field in Ward County and a new oil pay for the Todd Deep field of Crockett County. The upper Gulf Coast of Texas recorded 18 tests completed, and the pay-off included 2 oil fields, 3 oil pays, 1 oil field extension, 1 gas-distillate field, and 1 gas field, these finds having been fairly well scattered over the region. On the lower Gulf Coast of Texas 21 completions netted 2 new oil fields, 2 distillate fields, and 2 gas fields. A third of the 9 completions in Southwest Texas proved productive, as exploration resulted in discovery of 1 oil field, 1 distillate field, and 1 gas field.

Service Emblems Presented To 21 Sunray Oil Employes

Service emblems presented annually by Sunray Oil Corporation, Tulsa, Oklahoma, to employes completing 5, 10 and 15 years of service, were awarded recently to 21 men and two women. Silver, gold and diamond awards were made as follows:

Harry H. Mack, vice president and general production superintendent, presented in the Oklahoma City district a silver award to Hugh D. Blackburn; gold awards for ten years of service to W. L. Mastin, T. E. Cunnius, and C. H. Eastham, and diamond awards, signifying 15 years of continuous employment, to Frank Moore, C. F. Kuhn, G. H. Gamble and E. P. Heath.

Those in the Allen production district receiving five-year silver awards were R. A. Brooks and C. T. Henkins. Ten-year gold awards went to Victor T. McGowen, J. B. Davis and W. E. Westbrook.

Four employes of Sunray's refinery at Allen, Pontotoc County, Oklahoma, have completed ten years of employment and received emblems in gold from Floyd L. Martin, vice president in charge or refining. They were: Joseph H. Passmore, Edgar Dean, Carl F. Kilo, and David M. McCormick.

F. B. Stinson, accounting department, Tulsa office, received from President C. H. Wright, a diamond emblem in recognition of completion of 15 years of employment. D. C. Kennedy, assistant purchasing agent, received a gold award. Mrs. Gwyneth J. Davidson, of the legal department, was the first Sunray woman to receive a 15-year service award. To Miss Sibyl Wengle, assistant secretary, New York City, went a gold emblem, representing ten years with the company.

In Texas this year the only employe to receive a service award is Thornton E. Pryor of the Odessa production district, whose ten years of service merited a gold award. Harry E. Welty, Windom, Kansas, received a five-year silver award.

Eligible for silver awards now on military leave are: Lt. David P. Johnston, Navy; A. E. Moeller, CM 1/c; Lt. Edgar H. Parks, marine corps, and Pfc. T. A. Clote, air corps.

Oil Areas in California Now Being Reclassified

The classification committee of the Pacific Section of AAPG has undertaken a reclassification and, where desirable, a renaming of California oil fields, oil pools and oil areas. It is cooperating with both the division of oil and gas and the conservation committee of California Oil Producers in this capacity. In addition, the committee gathers statistics on wildcat drilling.

Members of the committee, their addresses and the territories assigned to them follow: Frank S. Parker, chairman, PAW, 758 Subway Terminal Building, Los Angeles 13, Los Angeles basin; Harvey Lee, Union Oil Company, Los Angeles 14, coastal district; Robert W. Burger, The Texas Company, Bakersfield, west side of San Joaquin Valley and northern California; Mason L. Hill, Richfield Oil Corporation, Bakersfield, central valley and east side districts.

Vaughey Cites Industry's Growth in Mississippi

Since discovery of oil in Mississippi, in 1939, development has grown until there are 53 major oil companies operating in the state. Also there are numerous smaller independent concerns, and an average of 87 exploration crews active at this time.

Summarizing the growth of the industry in Mississippi, W. M. Vaughey, independent operator at Jackson, and a vice president of the Independent Petroleum Association of America, said recently that approximately nine or ten million acres of land in the state are under oil lease. Landowners are realizing at least $7,500,000 in annual rentals, and based on present production, approximately $2,297,964 is being paid annually in royalties.

Vaughey said that in 1944, Mississippi discovered 186 million barrels of new oil or 170 million barrels more than in 1943. Estimated proven reserves in the state amounts to 209 million barrels, according to the speaker.

Conventions By Mail

Graphic Arts Victory Committee, National City Bank Building, Madison at 42nd Street, New York 17, has published a booklet on "How to Conduct Your Convention by Mail." This is a second edition of a guide book published in 1943, at the special request of the Office of Defense Transportation, designed to stress the importance of the wartime role of the mail-order convention.

Good Diggin'- CHAINED 100% WITH Silverlink ROLLER CHAIN

HINKLE-BAILEY DRILLING CO. is drilling at 6,000 ft. on this Gulf Coast wildcat with a Model CT-5 internal-combustion-powered drawworks manufactured by Portable Rig Division of Texas Iron Works, Houston. Mechanical trouble to date: None. Mechanical trouble expected: None . . . based on the trouble-free performance of this rig for many years in U. S., Russian, Venezuelan, Colombian, Argentine and Brazilian fields. Among the proven products outfitting this rig is finished steel Silverlink Roller Chain, a chain backed by 68 years of constant research and development. The operator is one of many drilling contracting companies . . . the manufacturer one of many builders of drilling rigs who know, from long experience, of the dependable performance assured by Silverlink Roller Chain.

LINK-BELT COMPANY

Indianapolis 6, Dallas 1, Houston 2, Los Angeles 33, Kansas City 6, Mo., New York 7, Toronto 8.

*In cooperation with the government conservation program, Silverlink roller chain is now furnished in a durable "blackout" finish.

9764

Silverlink Roller Chain drives on this rig are as follows: Transmission shaft to rotary shaft—1¾" pitch double width. Transmission to oil pump—¾" pitch single width. Rotary shaft over line shaft idler sprocket to drum (high side)—2" pitch single width. Rotary shaft to drum clutch (low side)—2½" pitch single width. Dual drive to drawworks—1¼" quadruple width. Compound chain is 1¼" pitch quadruple width. Water pump and oil pump drives are ¾" pitch single width.

LINK-BELT
Silverlink
ROLLER CHAINS

New Oil and Gas Fields and Pay Horizons Discovered in the United States in February, 1945

Also Important Extensions to Established Fields

COUNTY	FIELD	COMPANY, WELL AND LOCATION	Date Spudded	Date Completed	Total Depth (Feet)	Completion Horizon (Feet)	[1]Name, Character and Age of Producing Formation	[2]Initial Production Method and Choke	Gravity of Oil	[3]Structure; [4]Method of Discovery	Tentative Evaluation of Discovery or Extension (Opinion of Relative Importance of Area from General Viewpoint of the Industry, Based on Pertinent but Necessarily Incomplete Data. Later Development or More Complete data Obviously Might Require Revision of this Tentative Opinion).
		ILLINOIS—New Oil Field									
Wayne	Keenville	Gulf's M. Anderson 1, nw nw ne 26-1s-5e	11-18-44	2- 5-45	3158	3004-3006	Aux Vases sd; Miss	P 11; 240 wtr	....	.....	Halfway bet Coil and Sims, 4 mi fr each.
		ILLINOIS—New Oil Pays									
Edwards	Cowling	G. H. Wickham's M. Schroeder 2, se ne se 27-2s-14w	1- 7-45	2-20-45	2958	2152-2166	Waltersburg sd; Miss	P 50	....	.....	Nearest wells prod fr McClosky after testing McClosky dry.
White	Herald	N. V. Duncan's H. G. Aud 1, sw nw ne 27-6s-9e	12-20-44	2-27-45	3017	3010-3016	McClosky li; Miss	P 20	....	.....	First prod in area below Aux Vases.
		ILLINOIS—Oil Field Extensions									
Edwards	E. Albion	Morton & Keith R. R. Equip.'s Garner 1, ne ne nw 28-2s-14w	12-10-44	2-13-45	3065	3057-3065	McClosky li; Miss	P 250	....	.....	¾ mi e ext and wthn 1½ mi prod in Cowling pool.
Hamilton	Thackeray	Nat'l. Assoc. Pet.'s Downen 1, nw nw ne 10-5s-7e	.....	2-27-45	3369	3354-3369	Aux Vases sd; Miss	P 76	....	.....	Extends pool ¾ mi n.
Wayne	Clay City Consol.	Pure's E. E. Grubb "A" 1, sw se sw 4-1s-8e	1-18-45	2-27-45	3269	3122-3135	"Lower O'Hara" li; Miss	P 42; 2 wtr	....	.....	1 mi w of previous prod.
Wayne	Clay City Consol.	Pure's S. J. Staley "A" 1, se se nw 23-2n-7e	1-29-45	2-20-45	3028	2985-3003	Rosiclare sd;				
						3003-3028	McClosky li; Miss	P 249; 49 wtr	....	.....	¾ mi fr previous porod wells.
Wayne	Leech Twp.	New Penn Dev.'s E. P. Hallam 1	11-23-44	2-13-45	3522	3375-3394	Aux Vases sd; Miss				
						3431-3457	Levias li;	P 22; 8 wtr	....	.....	¾ mi nw ext; 1 mi sw of nearest prod in Goldengate Consol pool.
		KANSAS—New Oil Fields									
Barton	Carroll	Raymond Gear's Carroll 1, sw ne sw 21-17s-14w, abt 2 mi n Boyd Pool	.....	2- 2-45	3370	3356-3370	Arbuckle li; Cam	P 250	....	Str trp; Dr	Fairly important strike alg sw trned Kansas Uplift; not likely to cover more than 200 acres.
Barton	.....	Solar Oil Co.'s Behrens 1, sw ne 6-20s-15w, 1 mi n Pawnee Rock E. pool	.....	2-25-45	3733	3729-3733	Arbuckle li; Cam	F 250	38	Str trp; sub-dr	Important strike; appears to open possibilities for prolific prod alg sw trend Kansas Uplift in Pawnee Rock area; prod formation highly porous; likely to prod 8,000 bbls per acre.
Ellis	.....	Nadel & Gussman's Karlin 1, se se se 1-12s-18w, 2½ mi sw Bemis pool	.....	2- 1-45	3674	3666-3674	Arbuckle li; Cam	F 220	....	Str trp; seis, sub	Fairly important strike; may link Bemis and Walters pools.
Graham	.....	Wood River Oil Co.'s Faulkner 1, sw se se 27-10s-22w, 10 mi sw Morel pool	.....	2-28-45	3633	3629-3633	Marmaton li; Penn	S 50	....	Ant; seis dr	Undetermined; strike at nw sec Kansas Uplift.
Rush	Ryan	Inland Oil Co.'s Peterson 1, se se sw 35-19s-16w, 2½ mi nw Pawnee Rock pool	.....	2-24-45	3727	3725-3727	Arbuckle li; Cam	F 2800	38	Str trp; seis	Important strike; Arbuckle very porous, highly saturated; may link with Pawnee Rock pool, proving couple cousand acres; recovery expected to be 8000 bbls per acre.
Trego	.....	Harber & Lee Greenburg Trustee's Cotton 1, sw sw ne 15-12s-21w, 1 mi s Ogallah pool.	.....	2-27-45	3978	3962-3978	Kansas City li; Penn	P 50	38	Possible fld; sub	Undetermined; may link up with Ogallah 1-well pool to s.
		KANSAS—New Gas Field									
Douglas	.....	J. M. Huber's Community 1, nwc 33-12s-20e, 1 mi e Lawrence	.....	2- 3-45	1797	674- 694	Kansas City li; Penn	F 0.1 mln	....	Ant; seis	Unimportant.
		KANSAS—New Oil Pay									
Ellis	Pleasant	Sunray Oil Corp.'s Pfeiffer 1, sw ne se 2-14s-20w	.....	2- 6-45	3885	3883-3885	Arbuckleli; Cam	P 25	37	Str trp; dr	Not very important; third prod zone for Pleasant prod fr Sooy and Reagan sands.
		NORTH LOUISIANA—New Gas Field									
De Soto	.....	E. P. Jarvis' Franklin et al 1, 6-11n-12w	11-28-44	2-10-45	2827	1760-1765	.....	F 0.035 mln	....	.....	Unimportant.
		NORTH LOUISIANA—Oil Field Extension									
Richland	Delhi	Rogers Lacy's B. May 1, c sw nw, 26-17n-9e	1- 6-45	2-14-45	3795	3462-3470	Tuscaloosa sd; U. Cre	F 232 $\frac{A}{18}$"	34	.....	1¾ mi se extension and good producer. Single-well reserve 400,000 bbls. Adds 5,000,000 bbls to fld.
		SOUTH LOUISIANA—New Oil Fields									
Acadia	Iota	Union Sulphur-Magnolia's Medlenka 1, 748 e 591 n of swc 11-8s-2w, Iota area	11-20-44	1-23-45	9692	9380-9390	Frio sd; Olig	F 215, 8% wtr; $\frac{1}{8}$"	32	SD; rfl, seis	Single-well reserve est 900,000 bbls.
Beauregard	W. Pinegrove	Magnolia's Lutcher-Moore Lbr. Co. 1-C, 1980 n 660 w of sec se¼ 24-5s-12w, W. Pinegrove area.	5- 8-44	2- 2-45	12640	11343-11350	Wilcox sd; Eoc	F 14; $\frac{1}{8}$"	....	D; rfl, seis	Single-well reserve est 480,000 bbls.
		SOUTH LOUISIANA—New Oil Pay									
Vermilion	W. White Lake	Union of Calif.'s State-White Lake 1-B, 2660 e 1320 s of State 1-A, disc. well, T-14s-2w.	9-11-44	1- 8-45	11996	11840-11845	Sand; Mio	F 92; $\frac{7}{64}$"	33.8	D; rfl, seis	Deep oil pay in gas-dist Miocene fld. Single-well reserve est 560,000 bbls.
		SOUTH LOUISIANA—New Distillate Pays									
St. Landry	Cankton	Danciger's G. Pothier 1, 1391 n 330 w of sec 12-8s-3e, nw Sun's Boagni disc well (OWWO).	9-18-44	11- 8-44 1-30-45 (WO)	10255	10050-	Frio sd; Olig	F 113; $\frac{5}{32}$"	65	.....	Originally made 742,000 gas, $\frac{A}{18}$-in choke, started to show sw at 2790-97 ft in Pothier sd. Single-well reserve 580,000-600,000 bbls.
St. Mary	N. Jeanerette	Atlantic's Teche Sugar Co. 1, 7000 s 2735 e of nwc 19-13s-9e	7-22-44	1-25-45	12992	11880-11892	Sand; L. Mio	F 76; $\frac{A}{18}$"	50.5	Flt; R, seis	Deeper oil pay than disc 11,398-460 in Miocene. Two additional tests in fld dry. Single-well reserve 960,000 bbls.
		SOUTH LOUISIANA—Oil Field Extension									
St. John	Laplace	Atlantic's Lutcher-Moore Lbr. Co. 2-A, 660 n&e of swc 1-11s-7e	9-11-44	2-14-45	11102	10340-10354	Sand; Olig	F 206, 15% bs&w; $\frac{1}{8}$"	51.8	.....	2000-ft extension. Gas 2,880,000,000 cu ft, dist dist 50,000 bbls.
		MICHIGAN—Oil Field Extension									
Allegan	S. Monterey	H. C. William's Kern 1, se nw sw 24-3n-13w, 1¼ mi e S. Monterey	10-31-44	3- 1-45	1661	1659-1661	Traverse li; Devo	P & F 200	....	.....	.....
		NEW MEXICO—New Oil Field									
Lea	.....	E. J. McCurdy Jr.-McElroy Ranch Co.'s State-Young 1, c ne nw 20-18s-32e, 2¾ mi s by w Maljamar fld, which prod fr same zone and deeper.	8- 3-40	2-14-45	1783	3765-3778	Queen sd; Perm	F 376	38.5	Ant; geol	Pay equiv to 1st oil zone in Maljamar fld with ult yld of 40,000-60,000 bbls per well. Area rated good prospect for underlying San Andres li prod.

		2¾ mi s by w Maljamar fld, which prod fr same zone and deeper.									ult yld of 40,000-60,000 bbls per well. Area rated good prospect for underlying San Andres li prod.
		OHIO—New Gas Fields									
Coshcoton		Pure's W. M. Cullison 1, sec 10 Perry twp		2-15-45	3168	3110-3166	Clinton sd; Sil	F 2; 1,152 mln			Indicates new pool in ne part Perry twp.
Portage		Roy Weed's Melvin Roberts 1, lot 11, Aurora twp, 12 mi nearest prod		2- 3-45	3945	3858-3930	Red Clinton sd; Sil	F 0.372 mln			First commercial well in county.
Tuscarawas		Frank Lyon's William Porter 1, lot 37, Washington twp		2-20-45	3478	950-1010 3430-3470	Berea sd; Miss Oriskany sd; Devo	F 2.25 mln			Prod fr Berea while drilling deeper. 4 offsets will be drilled to Berea or Oriskany.
		OHIO—New Gas Pay									
Summit	Bath	Wiser Oil Co.'s H. J. Steiner 2, lot 44 Bath twp		2- 7-45	2094	3065-3094	Newburg sd; Sil	F 0.97 mln			All other wells in pool prod fr Oriskany or Clinton sands.
		OHIO—Oil Field Extension									
Muskingum	Salt Creek	Industrial Gas Co.'s Mary Murphy 1, sec 28 Salt Creek twp		2- 5-45	4256	4251-4256	Medina sd	46			Extends pool ½ mi n.
		OKLAHOMA—New Oil Fields									
Bryan		Amerada Pet. Co.'s Williams 1, ne ne sw 27-6s-7e, w of Mead		2-23-45	3257	2910-3005	Bromide sd; Ord	F 193		Ant; Sub, cd, seis	Important strike; structure is knife-edge steep anticlinal fld with prod on upthrown side of flt; likely extend abt 3 mi nw-se to connect with prod in 18-6s-7e; about ½ mi wide.
Cleveland		Magnolia's Anneler 1, csw ne 26-6n-1w, about 4 mi se Lexington		2- 6-45	7035	6075-6083	Bartlesville sd; Penn	F 110		Str trp; seis, sub	Undetermined; Wilcox sd dry.
Garfield		Con-Tex Pet. Co.'s Wolfe 1, ne sw sw 34-24n-3w, abt 2 mi n Barnes pool		2-20-45	4847	4833-4847	Wilcox sd; Ord	F 1096; 2 mln; ¾"		Ant; seis, sub	Important strike along Nemaha trend.
Greer		E. M. Thomasson's Craig 1, nw se se 3-6n-21w, 2½ mi sw Granite pool		1- 1-45	635	607- 632	Granite Wash cgl; Perm	P 10	36	N or strp trp; dr	Unimportant.
Logan		R. E. Havenstrite's Havenstrite 1, nw ne ne 14-18n-4w, abt 1½ mi s Hull pool		2- 7-45	4225	4210-4225	Layton sd; Penn	F 151; 15 wtr		Ant; sub	Undetermined; likely small area covering abt 160 acres.
Oklahoma	Coffee Creek	Gulf'd Beck 1, sw sw sw 15-14n-2w, 2 mi e N.E. Edmond pool		2- 9-45	6167	5824-5849	Hunton li; Dev	F 86; 11 wtr	36	Str trp; seis	Not considered important.
Payne		Hanlon-Buchanan, Inc.'s Heiring 1, se se se 18-19n-2e, w town of Stillwater		2-12-45	4552	4545-4552	Misener sd; Miss	F 250		Closed struct elong; seis	Fairly important; likely to cover 640 ac; Misener sd prod in area.
Pontotoc		Senora Oil & Gas Co.'s Skirvin-Tyson 1, se ne ne 17-4n-6e, in shallow Ada gas pool.		2-14-45	2712	2415-2478	Hunton li; Devo	F 240		Ant; dr	Fairly good strike; develops oil prod in Ada area where number sm gas pools loc n town of Ada.
Stephens		Magnolia's Jones Heirs 1, cnw se 21-1n-4w, between Doyle and Scholem-Alechem pools.		2- 1-45	5590	5535-5550	Sand; Penn.	P 300	21	Ant; seis	Opens new heavy oil area; appears important and has stimulated interest in area where little new prod has been found in several years.
		OKLAHOMA—New Oil Pay									
Garvin	N.W. Hoover	Helmerick & Payne, Inc.'s Gaither 1, sw sw ne 14-1n-1w		2-20-45	2525	2154-2205	Sand; Penn	F 675		Ant; dr	Important strike; establishes deepest Pennsylvanian prod in pool where prod to date has been bet 1050 and 1450 ft. Boosts reserves to abt 9 mln bbls, estimated.
		OKLAHOMA—New Gas Pay									
Oklahoma	W. Edmond	Sohio Pet. Co.'s Patten 1-B, csw sw 27-14n-4w, on e side W. Edmond pool		2-28-45	6935	6427-6435	Prue sd; Penn	F 180 dist, 2.235 mln.		Str trp; dr	Opens third and shallowest prod horizon in W. Edmond pool.
		OKLAHOMA—Oil Field Extensions									
Garvin	Pauls Valley	Texas Co.'s Trahern 1, se nw nw 32-4n-1e, ½ mi n Paul Valley pool		2- 4-45	4702	3988-4011	Sand; Penn	F 493; ¾"		Ant; sub	Important extension; adds approx 400 prod acres to pool.
Logan	Lovell	Fox & Fox Co.'s Hudson 2, cnw nw 35-18n-4w, between Lovell and N. E. Crescent pools.		2-27-45	4916	4868-4916	Layton sd; Penn	F 150		Ant; sub	Fairly important; may connect Lovell and S.E. Lovell pools; proves up approx a sec.
		UPPER TEXAS GULF COAST—New Oil Fields									
Harris	Addicks	Texas Co.'s Mrs. Madge Hopkins 1, 1750 fr wl 1980 fr sl R. H. Davis sur A-225 and 269.37-ac lse, 996.68 fr el lse, 3 mi se Addicks.		1- 1-45	8014	7703-	Cockfield sd; Eoc	F 4.13; ¼"	45		Single-well reserve est 50,000 bbls.
Liberty	Grogan	Shell's Grogan Mfg. Co. et al 1, 1011.3 s 2500.6 w of swc Shell s Jacob Cherry lse, 380 n of nl of J. G. Puterbaugh sur, 4100 w nw of Gulf's 5916 dry hole n of Cleveland fld.	10-21-44	2-12-45	12250	5782-5784	Cockfield sd: Eoc	F 294, 2% wtr; ¼"	40.3	Ant; sub	Single-well reserve est 320,000 bbls.
		UPPER TEXAS GULF COAST—New Gas Fields									
Colorado	W. Orange Hill	Pan American's R. L. Williams 1, 1787 fr nwl 1787 fr nel sec 663 and CTRR sur, 11,900 ne of Cities Service's Winnie Poole 1 at Ramsey fld.	11-10-44	1-28-45	9250	8368-	Wilcox sd; Eoc	F 3.156 mln; 11/64"			Single-well reserve est 3,520,000,000 cu ft gas, 75,000 bbls cond.
Matagorda	W. Markham	Atlantic's Denman-Kountze 3-C, 880 fr wl 660 fr nl lot 12 midway between No. 1 and No. 2 dry holes on "C" lse, Henry Parker sur, 150-ac lse.	10-25-44	1- 8-45	5311	4865-4878	Miocene sd; Mio	F 4; 1 mln; ¾"			Single-well reserve est 2,400,000,000 cu ft gas.
Brazoria	Old Ocean	Magnolia-Abercrombie's B.R.L.D. 1-C, start s cor David McCormick sur go ne alg sel sur 4436.65 th 2488.43 se at ra, 1000 ne Shell's Evans 1.	3-10-44	5-18-41 1-30-45 (WO)	10943	10830-10820	Frio sd; Olig	F 292; ¼"	48.2		Orig completed in 9680-ft sd making 35.1 grv oil; later in new sd. Single-well reserve 640,000 bbls.
		UPPER TEXAS GULF COAST—New Oil Pays									
Hardin	NW Flk Sour Lake	Texas Co.'s Mrs. R. H. Kirby 1, 1320 fr el 330 fr sl 170-ac lse, Stephen Jackson sur.		1-14-45	4805	3270-	Miocene sd; Mio	P 35, 3% wtr	17.9		Single-well reserve est 200,000 bbls.
Polk	Livingston	Shell's Dick-Failing 6, 467 fr ne&sel 160.78-ac lse A. Viesca 7-lge gr A-77, 990 nely fr No. 1 well.	12-17-44	1-31-45	7036	6566-	Wilcox sd;.Eoc	F 600, 0.2% wtr; ¼"	36		New Wilcox sd 400 ft above regular Wilcox. Single-well reserve est 280,000 bbls.
		UPPER TEXAS GULF COAST—Oil Field Extension									
Harris	Satsuma	Tide Water's Ruth G. Cobb 1, 467 fr el 1400 fr sl 640-ac lse, Washington County RR sur, w of prod.	12-10-44	2-13-45	7805	6822-	Yegua sd; Eoc	F 339; ¼"	40		2000 ft west ext. Single-well reserve 280,000 bbls.
		LOWER TEXAS GULF COAST—New Oil Fields									
Goliad		Amerada's Albert Waitschies 1, 560 fr sel 2260 fr nel 188.97-ac tr, E. J. Armstrong sur.	4-22-44	10-27-44	13266	5920-	Vicksburg sd; Olig	F 22; ¼"	40.3	D	Single-well reserve est 360,000 bbls.
Kleberg	Ricardo	Tide Water's E. W. House 1, 660 fr e&sl 160-ac lse and blk 36, Kleberg Town & Improvement subdvn.		1-24-45	8650	7243-7268	Frio sd; Olig	F 208 ⅛"	37	Ant; seis	Single-well reserve est 640,000-1,000,000 bbls.

New Oil and Gas Fields and Pay Horizons Discovered in the United States in February, 1945

Also Important Extensions to Established Fields

COUNTY	FIELD	COMPANY, WELL AND LOCATION	Date Spudded	Date Completed	Total Depth (Feet)	Completion Horizon (Feet)	[1]Name, Character and Age of Producing Formation	[2]Initial Production Method and Choke	Gravity of Oil	[3]Structure: [4]Method of Discovery	Tentative Evaluation of Discovery or Extension (Opinion of Relative Importance of Area from General Viewpoint of the Industry Based on Pertinent but Necessarily Incomplete Data. Later Development or More Complete data Obviously Might Require Revision of this Tentative Opinion).
		LOWER TEXAS GULF COAST—New Gas Fields									
Jackson	Westhoff	Stewart's A. E. Westhoff 1, 660 fr el 467 fr sl 120-ac lse, Jos. Rector Lge	12-26-44	1-28-45	6516	5428-5440 5964-5972	Frio sd; Frio	F 2.17 mln, ¼" F 3.05 mln, ¼"	....	.....	Single-well reserve est 5,000,000,000 cu ft.
Victoria	.....	Raymond D. Reynolds' Sallie E. Ragsdale 1, 1800 sw of swl F. A. Gillespie & Sons Co. 80-ac lse on 1000-ac lse, J. H. McConnaughey sur.	10-15-44	11-26-44	5978	4436-4444	Vicksburg sd; Olig	F 36 mln	....	.....	Single-well reserve est 2,160,000,000 cu ft.
		LOWER TEXAS GULF COAST—New Distillate Fields									
Lavaca	.....	Sterling O&R Co.'s Seekamp-Palmer 1, 660 ne&nwl of 160-ac lse, being e of n 40-ac of 160-ac Seekamp-Palmer tr e of the Crk.	.....	1-20-45	8848	7700-7750	Wilcox sd; Eoc	F 48; ¼"	53.8	D; sub	Single-well reserve est 12,000,000,000 cu ft gas, 300,000 bbls. cond.
Nueces	Cheeves	L. M. Lockhart's Carrie Cheeves 1, 1650 fr s&el 1043-ac lse, San Antonio de Agua Dulce and Casa Blanca Grs 3150 w nw of dry hole on Oliver Bird land.	.....	11-15-44	9097	5168-5182	Frio sd; Olig	F 11; 16 sw, 2 mln; open	....	.....	Single-well reserve est 4,600,000,000 cu ft gas, 25,000 bbls. dist.
		EAST TEXAS—New Gas-Distillate Field									
Freestone	.....	Texas Co.'s W.A.L. McKnight 1, 660 ft out nwc of 149-ac lse, 5210 ft snl and 660 ft ewl I. H. Reed sur, 3 mi sw Fairfield; 6⅓ mi sw Steward Mill pool (Woodbine gas), nearest prod.	8-27-44	2-26-45	8903	8275-8297 8232-8247	Travis Peak sd; Travis Peak; L. Cre	F 14.6 mln, 30 dist.	60	Aut; geop	First Travis Peak prod for county. Market for gas assured, enabling discoverer to proceed with development. Condensate yld per mln ft of gas below par, discounting oil possibilities in Travis Peak.
		NORTH TEXAS—New Oil Fields									
Jack	.....	James Stewart & Co., Inc.'s J. W. Kinder 1-D, 467 ft out nwc B. H. Epperson sur, A-208, 1¾ mi e Sewell fld, nearest deep prod.	9-29-44	2-21-45	4652	4204-4225	Marble Falls sd; Penn	F 90; ¼"	40	Ant; geol	Lower structurally than Sewell multipay fld, 2 mi w; prod area will be small. Single-well reserve 160,000 to 200,000 bbls.
Throck-morton	.....	James Stewart & Co., Inc.'s J. W. Tharp 1, 467 ft out sec TE&L Co. sec 3007, 2 mi nw Ewalt fld.	11-14-44	2- 2-45	4885	4260-4270	Bend li; Penn	P 171; 34 wtr	....	Ant; geol	Entered Bend at 4250 ft, or 52 ft low to nearest Ewalt pool well, and considered a separate structure. Not important.
		NORTH TEXAS—New Oil Pay									
Young	Farmer-Garvey	Standard of Ohio's J. R. Garvey-Garr 2, 330 ft wel and 1184 ft snl of w 220.2-ac of BBB&C Ry. sec 1, A-35, e side 4400-ft Bend wells.	11-15-44	2-15-45	5340	5186-5216	Lime; Miss	F 465; 32 wtr; ½"	45.9	Ant; geol	Small prod area. Crude yld per ac will be greater than nearby Bend wells, which will be deepened in some instances. Single-well reserve 200,000 to 240,000 bbls.
		SOUTHWEST TEXAS—New Oil Field									
Duval	.....	M. M. Miller & Son's George Harbarger 1, 2019 fr wl 1155 ft sl blk 26 330 fr el 160-ac lse, Santos Flores Gr, Agua Poquita sur.	1- 6-45	2- 9-45	5948	5839-	.....	F 72; 4/64"	45.2	N	Single-well reserve est 288,000 bbls.
		SOUTHWEST TEXAS—New Gas Field									
Jim Hogg	.....	S. G. Hurlbut-Gulf States Oil Co.'s J. Vela Pena 1, 330 fr nl 330 fr wl blk 10 White subdvn El Feyote Gr 80-ac lse, sur 889.	11-20-44	1- -45	3169	3149-3165	Vicksburg sd; Olig	F 12 mln; open	....	.....	Single-well reserve est 1,600,000,000 cu ft.
		SOUTHWEST TEXAS—New Distillate Field									
Zavala	.....	Texas Co.'s Nat. Bank of Commerce 1, 1980 fr wly/nwl and sly/nel E. A. Wolf sur A-1202 and of 316-ac tr.	11-16-44	2- 5-45	4933	4224-4236	.....	F 575; 10 mln; ¼"	....	.....	Single-well reserve est 1,920,000,000 cu ft gas, 20,000 bbls dis.
		WEST CENTRAL TEXAS									
McCulloch	.....	Mass-Tex Oil & Gas Co.'s S. A. Lawson 1, 860 ft snl and 350 ft wel Valentine Holman sur No. 1093.	6-22-44	2- 1-45	1563	1556-1563	Bend li; Penn	F 2.5 mln	....	Ant; geol	Not important, but outlying tests under way to explore for oil.
		WEST TEXAS—New Oil Field									
Ward	.....	Gulf's John Edwards 2-B-T, 330 ft fr se and 3696 ft fr ne lines James M. Andrews sur No. 6, 4¼ mi s by e Monahans fld.	7-21-44	2-27-45	6439	4386-4562	Holt sdy li; Perm	P 61	36.4	Ant; geol	Prod declined sharply and wtr appeared after potential test. Not important; pay zone comprises thin layers of saturation.
		WEST TEXAS—New Oil Pay									
Crockett	Todd Deep	Amerada Pet. Corp.'s J. S. Todd 7-A, c se ne GC&SF Ry 25, blk WX, offsetting 5800-ft Crinoidal wells.	9-25-44	2-26-45	6350	6232-6318	Ellenburger dolo; Ord	F 2292; ¾"	41.9	Ant; geol	Single-well reserve of 320,000 to 400,000 bbls. All nearby wells on ne side, high point of structure, indicated commercial prod in Ellenburger before plugging back for completion in Crinoidal. Dual completions possible but avoided due to excessive paraffin in Crinoidal. Structure rises sharply in Ellenburger prod area.

[1] Character of producing formations abbreviated thus: ch, chalk; dolo, dolomite; li, limestone; sd, sandstone; sh, shale, ser, serpentine; cgl, congolmerate. Ages of formations abbreviated thus: Pleis, Pleiocene; Plio, Pliocene; Mio, Miocene; Olig, Oligocene; Eoc, Eocene; U. Cre, Upper Cretaceous; L. Cre, Lower Cretaceous; Jur, Jurassic; Tri, Triassic; Perm, Permian; Penn, Pennsylvanian; U. Miss, Upper Mississippian; L. Miss, Lower Mississippian; Devo, Devonian; Sil, Silurian; Ord, Ordovician; Cam, Cambrian.

[2] Barrels of oil per day (24 hr. rate), flowing (F), pumping (P), swabbing (Sw), or bailing (B); or million cubic feet of gas daily open flow capacity; size of choke given in inches. [3] Type structure abbreviated as follows: Ant, Anticline; D, Dome; Fld, Fold or Folded; Flt, Fault or Faulted; M, Monocline; N, Nose; SD Salt Dome; Str trp, Stratigraphic trap; Syn, Syncline; Ter, Terrace. [4] Method of discovery abbreviated as follows: cd, core drilling; dr, drilling; geol, geology; geop, geophysics; grv, gravity meter; ran dr, random drilling; seis seismograph; sub, subsurface geology; sur, surface geology.

Difficulty in Meeting Heavy Demand For Oils Reflected in Statistics

Both production and refinery runs of crude oil were increased in the week ended March 10 and were within small margins under all-time peaks reached a few weeks earlier. Nevertheless, there were comparatively large withdrawals of all major products from storage in meeting the unabating heavy demand. Crude oil, too, has continued to come from storage, and the latest total reported represented a new low since World War I times.

Production of crude averaged 4,768,000 barrels daily in the week of March 10, the American Petroleum Institute reported. That was 3000 a day more than in the previous week and 387,000 a day or 8.8 percent more than the 4,381,000 barrels daily recorded for the like week last year. Crude stocks in the United States stood at 218,675,000 barrels on March 3, the Bureau of Mines reported. That was 19,088,000 barrels or 8 percent less than the 237,763,000 barrels on hand a year previously and indicated for the week a withdrawal of nearly 100,000 barrels daily. Crude runs to stills averaged 4,777,000 barrels daily in the week of March 10, up 24,000 from the week before and 359,000 a day of 8.1 percent more than the runs of 4,418,000 daily in the week ended March 11 last year.

Production of gasoline at United States refineries, including natural blended, averaged 2,080,000 barrels daily, down 21,000 a day from the week before but 244,000 a day or 13.3 percent more than production in the corresponding week a year ago. Stocks of finished and unfinished gasoline were reduced during the week at the rate of 104,000 barrels daily, having declined to 96,876,000 barrels. They were, however, still above last year's curve by 11,607,000 barrels or 13.6 percent, as stocks March 11, 1944, totaled 85,269,000 barrels.

Gas-oil and distillate fuel oil production averaged 698,000 barrels daily in the March 10 week, down 20,000 a day from the week before but 94,000 a day or 15.6 percent above output in the like week last year. Stocks of these light fuels were reduced during the week at the rate of 158,000 barrels daily in meeting continued seasonal demand and then totaled 27,001,000 barrels. That quantity was 5,684,000 barrels or 17.4 percent less than the 32,685,000 barrels reported as of March 11 a year ago.

Residual fuel oil production averaged 1,393,000 barrels daily, up 146,000 a day from the week before and 127,000 a day of 10 percent above output in the comparable week a year ago. Stocks were lowered again by 144,000 barrels daily and sank to 44,150,000 barrels. That amount was nearly 8,000,000 barrels or 15 percent less than the 51,868,000 barrels reported on March 11 last year.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod.		Runs to Stills		Crude Stocks		Gasoline Stocks		Gasoil and Distillate Stocks		Residual Fuel Oil Stocks	
	Barrels Daily	Week Ended	Barrels Daily	Week Ended	Barrels	Week Ended	Barrels	Week Ended	Barrels	Week Ended	Barrels	Week Ended
High:												
1941	4,337	11-22	4,120	10-18	266,187	3-29	99,727	3-29	[1]54,983	11-15	102,448	1- 4
1942	4,337	2- 7	3,961	1- 3	263,208	3-28	[1]109,281	3-14	47,861	11-14	95,857	1- 3
1943	4,436	11-13	4,331	12- 4	245,752	5-29	94,159	3-20	47,187	11-27	72,881	1- 2
1944	4,762	9-30	4,798	12-30	240,992	1- 1	89,162	4- 1	48,863	10-28	64,644	10- 7
1945	[4]4,780	2-17	[4]4,803	2-24	221,628	1-20	97,603	3- 3	38,298	1- 6	56,074	1- 6
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	20,722	4-15	105,397	4- 8
1941	3,364	1-11	3,490	1-18	240,399	11-15	79,923	10- 4	28,382	4-12	90,914	7-12
1942	3,297	7- 4	3,393	5-23	231,896	12-12	75,934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,579	3-13	232,191	1- 9	68,182	10-16	30,732	4- 3	57,596	12-25
1944	4,357	1- 1	4,228	2-12	220,258	9- 9	76,302	1- 1	30,232	4-29	49,737	3-18
1945	4,678	1- 6	4,656	1- 6	[4]218,675	3- 3	86,616	1- 6	27,001	3-10	44,150	3-10

TRENDS OF 1944 AND 1945

Trends in Week Ended:	Crude Oil			Gasoline		Gasoil and Distillate		Residual Fuel	
	Production Daily	Runs to Stills Daily	Stocks Week End	Production Weekly	Stocks Week End	Production Weekly	Stocks Week End	Production Weekly	Stocks Week End
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,330
January 29	4,409	4,359	240,251	13,427	81,075	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	33,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,013	51,669
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,462	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,453	8,680	59,859
September 30	4,762	4,775	222,393	14,494	78,028	4,622	45,329	9,292	64,226
October 28	4,740	4,658	223,235	14,117	79,058	4,772	48,705	8,985	64,382
December 2	4,712	4,693	221,591	14,853	80,427	4,082	45,832	8,981	61,727
December 9	4,704	4,552	[4]220,258	14,611	80,880	4,056	44,436	8,923	60,458
December 16	4,695	4,537	222,075	14,145	82,747	4,353	42,413	8,727	59,280
December 23	4,729	4,682	222,575	14,635	83,355	4,605	40,846	8,798	58,509
December 30	4,705	4,798	222,998	15,342	86,614	4,257	39,495	9,156	57,430
1945:									
January 6	4,678	4,656	220,331	14,472	86,616	4,533	38,298	9,092	56,074
January 13	4,722	4,570	221,114	14,139	87,814	4,408	36,410	8,993	54,207
January 20	4,733	4,686	221,628	14,554	88,708	4,586	35,041	9,082	52,554
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,651	9,252	51,119
February 3	4,723	4,662	221,674	14,535	91,034	4,559	32,370	9,377	50,451
February 10	4,728	4,770	[4]218,894	14,996	92,455	4,565	30,544	9,237	48,845
February 17	[4]4,780	4,787	220,060	14,910	94,680	5,053	29,864	9,234	48,240
February 24	4,777	[4]4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,7 3
March 3	4,765	4,753	218,675	14,704	97,603	5,026	28,110	8,728	45,021
March 10 1945	4,768	4,777		14 557	96,876	4,887	27,001	9,752	44,150
March 11, 1944	4,381	4,418	[5]237,763	12,852	85,269	4,228	32,685	8,863	51,868
Change:									
In week	+3	+24	—676	—147	—727	—139	—1,109	+1,024	—871
In year	+387	+359	—19,088	+1,705	+11,607	+659	—5,634	+889	—7,718
In year	+8.8%	+8.1%	—8.0%	+13.3%	+13.6%	+15.6%	—17.4%	+10.0%	—14.9%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, March 4, 1944.

Streamlined Compact Meet Announced for June 15-16

Observance of ODT orders relative to conventions was pledged by Interstate Oil Compact Commission following a meeting of its executive committee in Oklahoma City last week, Earl Foster, commission secretary, announced.

"The executive committee voted to streamline future quarterly meetings in line with emergency orders of the Office of Defense Transportation limiting the size of conventions," Foster said. "Two more states have recently joined the compact, Montana and West Virginia, and the work of the commission has greatly increased in volume and importance since the beginning of the war."

The next quarterly meeting of the commission will be held in Oklahoma City, headquarters of the commission, on June 15-16. Only officials of the commission, its committees, and authorities on the subjects to be considered at the meeting will be invited to participate. The commission will extend its current study of natural gas problems, and papers and reports on various phases of the gas industry will be presented then by nationally prominent gas authorities.

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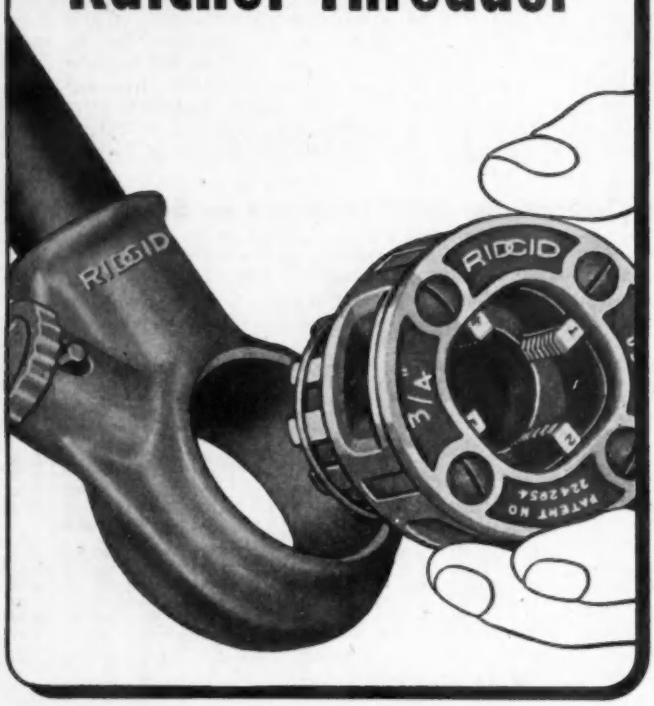

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State Department Promises to Help Firm With Middle East Line, Reports Declare

Interest in the Arabian-American Oil Company pipe line project in the Middle East was revived last week with reports that the State Department had assured the company it would assist in negotiating with other governments for the right-of-way from the Persian Gulf area to the Mediterranean.

A department spokesman, however, discounted the importance of the report, declaring that State Department assistance would be given an American business man asking for aid in conducting business abroad, and said there had been no recent developments in the matter.

The department official said the Middle East pipe line is definitely a postwar project, and under no circumstances short of a critical emergency could it be undertaken now, because of material, manpower and transportation shortages.

PRC Not Involved

So far as could be ascertained, Petroleum Reserves Corporation, which originally sought to make the government a party to the construction of the pipe line, has not been involved in any recent maneuvers, and while it was reported that a "big meeting" had been held on the subject of the pipe line, PRC, State Department and other agency officials disclaimed any knowledge of such a conference.

Meanwhile, a report of Standard Oil Company of California, released March 14, discussed the company's Persian Gulf operations but gave no indication of any intention to press the pipe line now. On the contrary, the report referred to the line as "under consideration as a future project" which would serve to bring Arabian oil closer to the consuming areas west of Suez.

Arabian-American and The Bahrein Petroleum Company Limited, subsidiaries owned jointly by Standard and The Texas Company, currently are producing more than 60,000 barrels of crude oil daily in the Persian Gulf area, and late this year will increase their output to 120,000 barrels daily to meet requirements of a new refinery under construction at Ras Tanura by Arabian American, the report said. Some of the increase also will be required for Bahrein's refinery on Bahrein Island, recently expanded to handle more than 60,000 barrels daily.

Natural Outlet

Discussing the future development of American concessions in the area, Standard said:

The region east of Suez is a natural outlet for products of the Persian Gulf operations. Marketing activities are carried on by the California Texas Oil Company Limited, also jointly owned by Standard of California and The Texas Company. This marketing company or its subsidiaries operate in Egypt, Africa, India, Australia, New Zealand, China and the Philippines.

"At present the products are largely consumed by the armed forces of the United Nations. The producing, refining and transportation facilities that have been expanded during the war will be able to supply Mediterranean and European needs after the war. A pipe line from the Persian Gulf to the Mediterranean Sea, which is under consideration as a future project, would serve to bring Arabian oil closer to the consuming areas west of Suez."

Suits Against Pipe Line Companies Dismissed

United States District Judge Royce Savage of Oklahoma has dismissed without prejudice suits brought by the attorney general in 1936 against purchasers and transporters of crude oil from the Osage Nation.

The complaints charged fraud in deducting 3 percent from the value of the oil run because of basic sediment and water. The circuit court at Denver upheld the contention of the oil firms that the custom grew up with the industry and the 3 percent deduction was an average due to the content of unsalable and unrefinable materials in the crude oil run.

The cases dropped were against The Texas Pipe Line Company, Oklahoma Pipe Line Company, Gulf Refining Company and Cosden Pipe Line Company.

Texas Company Building 3-Mile Louisiana Line

Sharman and Allen, Houston contractors, are laying three miles of 3-inch propane line for The Texas Company near Morgan City, Louisiana.

The line will be a tie-in between the company's Bateman Lake cycling plant and The Texas Pipe Line Company's pumping station at Berwick.

Oil Men, Governor Confer On Mississippi Pipe Line

A proposed pipe line system from Mississippi oil fields to Louisiana refineries was discussed last week by Governor Thomas L. Bailey, members of the state oil and gas board and pipe line officials.

Interstate Oil Pipeline Company was represented at the meeting by P. H. Hunter, L. F. Kahle, W. W. Boyer and S. W. Day, all of Shreveport; and Standard Oil Company was represented by Cecil Morgan.

No Opposition Expressed To Plans for Kansas Line

The Federal Power Commission has under consideration the application of the Kansas Power and Light Company for authority to construct new facilities for the transportation of natural gas from the Lake gas field in Barber County to its pipe line system near Pratt, Kansas, after a hearing March 14 at which no opposition was expressed to the project.

Company officials explained it will be necessary to build 18.5 miles of 16-inch line to connect with their present 18-inch line in Pratt County; 25,000 feet of 8-inch line in Barber County to connect with the proposed 16-inch line; 14,000 feet of 4-inch line to link up wells in the field, and a gasoline discovery and dehydration plant.

R. W. Howard, superintendent of measurement and pressure for the company, testified that the facilities were needed for expansion of a new gas field which is opening up to meet the demand of customers. After the second year of operation he said, 66 million cubic feet of natural gas per day will be made available.

FPC Sets Hearing May 15 On Texas-Canada Project

The Federal Power Commission has consolidated the applications of the Panhandle Eastern Pipe Line Company with respect to its proposed export of Texas natural gas to Canada and has ordered a hearing to be held in Washington May 15, at which Texas officials and others will be given an opportunity to oppose the project.

The company seeks to build facilities for the delivery of gas across the Canadian border under a contract calling for the furnishing of 5½ billion cubic feet annually.

Work Begins on Lion Oil Company's Arkansas Line

Anderson Brothers, Houston contractors, last week began laying 12 miles of 6-inch crude line in Arkansas for Lion Oil Refining Company.

The line will extend from the Midway field, southwestern Arkansas, to the Buckner area, where connection will be made with the Interstate Pipe Line Company's system.

Extension of Federal Pipe Line Act Proposed

Extension of the Federal pipe line act until June 30, 1947, is proposed in a bill introduced in Congress March 13 by Representative Clarence Lea of California, chairman of the House Interstate and Foreign Commerce Committee.

The pipe line act, under which a number of the emergency oil carriers have been built, was passed in 1941, with a provision that it was to expire June 30, 1945.

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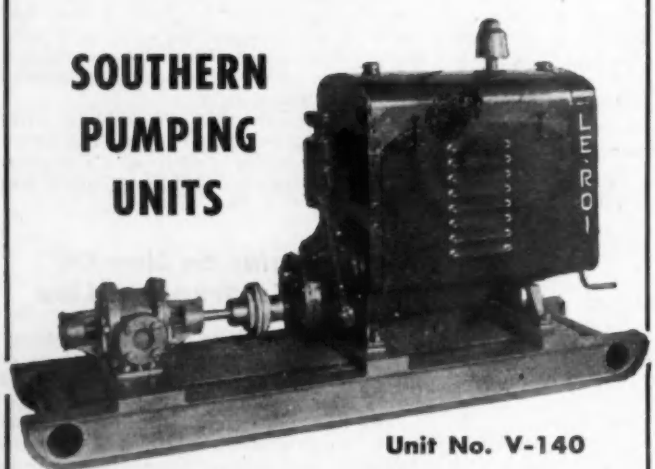

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U. S. Field Operations

Oklahoma

Okfuskee County Wildcat Is Apparent Pool Opener

Okfuskee County wildcat looks like pool opener; Matheson well ready to test Simpson zone; Continental strike swabs 209 barrels of oil in 11 hours; dual completion planned in new Garber pool.

Okfuskee County: J. E. Crosbie, Incorporated, and Warren Petroleum Corporation's Sykora 1, NE NE SW 20-12n-7e, looks like a new strike west of Paden following a drill-stem test in the Cromwell sand between 3892-95 feet which recovered 300 feet of oil when tools were broken down. The well also had a good show in the Hunton between 4445-70 feet and pipe has been set at 4558 feet for production test.

Cleveland County: East of Moore the Matheson 1, NE NE 19-10n-2w, well being drilled by O. G. Harp which tanked 1315 barrels of oil in a few hours from Bartlesville sand several weeks ago and then sanded up, was preparing to test the simpson dolomite. The well has attracted considerable speculation since its first performance and interest cooled somewhat when operator drilled into dry Wilcox sand at 8966 feet, total depth. Simpson was topped 8898 feet.

Carter County: Continental Oil Company was still testing Dotson 1, SW NW NE 7-2s-3w, prospective pool opener northwest of the old Fox pool. Bottomed at 6487 feet and with more than 60 feet of pay reported in the Pennsylvanian series, the well swabbed 209 barrels of oil in 11 hours. Operators continue in attempts to make the well flow.

Garfield County: Cities Service Company was preparing to dual-complete Ford 1, NW SE SW 31-23n-3w, offset to the discovery well in the new Garber pool.

The well is now drilling below 3500 feet. Cities Service opened the area with Mariner 1 in Sec. 6, north of the old Garber pool which tested 10 million feet of gas in the Wilcox sand and later drilled deeper and completed for 2500 barrels of oil daily from the Arbuckle lime at 5247-97 feet. Both zones will be put into production in the offset test.

Logan County: Continental Oil Company's Caldwell 4, SW SW NE 26-17n-4w, in the Crescent pool, pulled tubing and was taking a survey after the well flowed 120 barrels of oil in 24 hours from the Layton sand topped at 4900 feet. Flow was through 1-inch tubing choke with tubing pressure at 50 and casing pressure at 200 pounds.

Industrial Safety Chart Series Is Made Available

The division of labor standards is cooperating with *Mill & Factory* on a series of industrial safety charts designed to promote safe working practices around common types of industrial equipment. A release on drill presses is the first in the series. Subsequent issues, which will be published monthly, will cover circular saws, power trucks, lathes and other types of industrial equipment. The series will continue indefinitely.

These charts will be useful in employe training and educational programs, for mounting on bulletin boards, for reproduction in house organs and trade publications, in safety training manuals and other related ways, it has been pointed out.

Copyright restrictions have been waived on these charts which can be purchased from *Mill & Factory*, 205 E. 42nd Street, New York 17, or from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Indian Lands Leased

Thirty-seven of the 77 tracts offered at the Five Civilized Tribes lease sale at Muskogee, Oklahoma, were purchased for a bonus of $38,866.16, or $12.04 an acre. Total offering was 6966.32 acres.

All of the seven tracts the Pawnee Indian agency offered March 8 were bought.

Kansas

Trego County Given New Pool from Arbuckle

Trego County test rated 40-barrel well from Arbuckle; Sumner County test logs saturation; Comanche County well shows stains in Simpson dolomite.

Trego County: Harpar Drilling Company's Cotton 1, SW SW NE 15-12-21w, 1½ miles north and a mile west of the Ellis Northwest pool, is rated a 40-barrel well from the Arbuckle lime at 3978 feet. Kansas Corporation Commission has designated it the Cotton pool.

Pratt County: Kingwood Oil Company's Gilchrist 1, CEL NE NE 7-28-11w, 2 miles north of the Cairo gas pool, swabbed 2 barrels of oil an hour after acidizing in perforations at 3643-3653 feet. The well is bottomed at 4520 feet in Arbuckle lime.

Sumner County: El Dorado Refining Company's Peterson 1, SE SE NE 23-33-2e, logged oil saturation in the Bartlesville sand and was testing.

Barton County: Kingwood Oil Com-

Wells Completed in the United States in Week Ended March 17, 1945

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS* This Week	Last Week	Cumulative This Year	Cumulative Last Year
Alabama	....	....	....	....	....	....	....	....	....	....	....	1	4	2
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	....	2
Arkansas	2	....	....	....	2	....	....	....	2	2	4	....	26	35
California	22	2	....	....	24	....	....	....	9	9	33	52	420	357
Colorado	....	....	....	....	....	....	....	....	....	....	....	....	8	6
Florida	....	....	....	....	....	....	....	....	1	1	1	....	2	....
Georgia	....	....	....	....	....	....	....	....	....	....	....	....	2	1
Illinois	19	....	1	7	27	2	3	....	4	7	36	30	365	321
Indiana	3	....	....	2	5	....	....	....	3	3	8	12	61	69
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	1	2
Kansas	14	....	....	12	26	1	2	....	2	4	31	50	290	374
Kentucky	2	....	....	1	3	....	....	....	1	1	4	10	110	124
Louisiana	13	....	....	2	15	....	2	....	2	4	19	14	184	121
North Louisiana	4	....	....	....	4	....	1	....	....	1	5	1	62	36
South Louisiana	9	....	....	2	11	....	1	....	2	3	14	13	122	85
Michigan	5	....	....	3	8	....	....	....	5	5	13	13	146	118
Mississippi	1	....	....	1	2	....	3	....	1	4	6	17	81	18
Missouri	....	....	....	....	....	....	....	....	....	....	....	....	8	3
Montana	4	....	....	....	4	....	....	....	....	....	4	4	38	51
Nebraska	....	....	....	....	....	....	....	....	....	....	....	1	2	7
New Mexico	4	1	....	1	6	....	....	....	1	1	7	9	102	83
New York	15	....	10	....	25	....	....	....	....	....	25	25	175	240
Ohio	....	2	....	1	3	....	....	....	....	....	3	13	137	166
Oklahoma	27	....	....	5	32	....	1	1	9	11	43	56	483	298
Pennsylvania	27	9	15	1	52	....	....	....	....	....	52	43	516	556
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	....	3
Texas	68	15	1	16	100	1	7	....	19	26	127	140	1,414	1,021
E.Tex.Bor. Co.'s	....	5	....	....	5	....	....	....	2	2	7	....	16	4
E. Texas Field	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Rest of E. Texas	1	....	....	....	1	....	....	....	2	2	3	3	41	55
North Texas	11	....	1	6	18	1	1	....	3	4	23	26	324	231
W. Central Tex.	1	1	....	1	3	....	....	....	2	2	5	8	70	75
West Texas	29	....	....	2	31	....	1	....	2	3	34	28	373	274
Tex. Panhandle	6	5	....	3	14	....	....	....	....	....	14	17	127	36
G. Coast, Upper	9	1	....	....	10	....	3	....	....	3	13	16	137	91
G. Coast, Lower	8	2	....	....	10	....	1	....	5	6	16	21	202	169
Southwest Texas	2	1	....	2	5	....	1	....	3	4	9	14	104	68
S. Central Tex.	1	....	....	2	3	....	....	....	....	....	3	7	20	17
West Virginia	2	19	....	2	23	....	....	....	....	....	23	12	161	190
Wyoming	3	....	....	....	3	....	....	....	....	....	3	4	35	31
Total U. S.	231	48	27	54	360	4	18	1	59	78	442	506	4,771	4,199

* Includes distillate wells. † Includes salt water disposal wells.

pany's Musenberg 1, SE SE SE 10-18-11w, Roesler pool outpost, found Lansing lime at 3028 feet and reported a show of oil at 3055-3061 feet.

Comanche County: M. H. Watts and T. Jeff Boucher's Boisseau 1, C SE NW 27-31-18w, between Coldwater and Elmore, which showed for a new gas pool at 5118-5147 feet in Mississippi lime, showed oil stain in Simpson dolomite at 5611-5645 feet.

New Mexico

Lea County Offset Is Dry On Preliminary Test

Offset to Lea County's deep Permian discovery proves dry on preliminary test; second operation assigned the Skelly deep area; Maljamar field Ordovician project making good progress.

Lea County: Gulf Oil Corporation's Gutman 1, north offset to its Drinkard pool flowing discovery in the Yeso (Clear Fork) at 6375-6430 feet, tested dry after perforating at 6280-6575 feet. Water appeared after re-perforating below 6485 feet. The company's State-Andrews 1, 1⅝ miles southeast and prospective discovery in lower Yeso below 6800 feet, was drilling at 7350 feet to fulfill a 7400-foot depth contract before running pipe for completion.

The volume of oil and gas along with high bottom-hole pressure indicate an attractive area is awaiting development, but probably separated from the Drinkard pool.

Skelly Oil Company's Steeler 2, indicated Yeso discovery for the Skelly field, was drilling at 7120 feet, and is scheduled to halt near the 7200-foot level to run pipe to try for completion in the 6500-foot zone. The company will test this horizon in drilling Johnson 2, a mile south.

The Texas Company's Eaves 1, 11 miles northeast of the Hobbs field, was drilling lime at 5705 feet to explore the Yeso after testing a nominal show of oil with water in the San Andres at 5667 feet.

Phillips Petroleum Company's State-Lea-Max 4, Maljamar area, was drilling at 10,605 feet in unidentified formation, but presumably above the Ellenburger.

Navarro Elects Officers, Will Operate Separately

V. A. Brill was elected president of Navarro Oil Company at a directors meeting following recent purchase of the company's stock by Continental Oil Company. With the company since 1938 and, executive vice president since 1942, Brill succeeds S. P. Farish as president.

Guy Graham was named executive vice president, secretary, and treasurer. A. K. Tyson, Continental's manager of lands for the southern region, has been elected vice president, as was John Moran, general attorney for Continental. R. L. Bosworth is the new assistant secretary, and E. F. Harrell assistant treasurer. The new board of directors consists of Brill, Graham, Tyson, John Moran, Dan Moran, and J. E. Teddlie.

Navarro will continue to operate as a separate company with the same policies and the same personnel, although Continental now holds 95 percent of the company's capital stock.

West Texas

Andrews Wildcat Shows Production in Devonian

Southwestern Andrews County wildcat shows production in Devonian, giving 2 deep pays for completion choice; Devonian sector of Fullerton field extended 3 miles south; Clear Fork strike in Andrews County flows briefly.

Andrews County: Shell Oil Company and The Texas Company's Ratliff-Bedford 1, C NW NE PSL 4, Block 73, 5 miles west by north of a Devonian wildcat producer, recovered 360 feet of oil and gas-cut mud with fair blow of sweet gas when drill-stem test was made in Devonian at 8808-59 feet. A second test at 8859-84 feet returned 800 feet of heavily oil and gas-cut mud. These two tests establish a thick pay section, but less attractive than more productive zone in Lower Permian, possibly the Wolf Camp, temporarily passed up at the 7700-7800-foot level. The prospect will be carried to the Ellenburger before running pipe for completion.

Stanolind Oil & Gas Company's University 1-P, C NE NE Sec. 44, Block 13, and amidst high-priced leases acquired from the University, is heralded as a 3-mile south extension to the Fullerton-Devonian area, also a new field through having flowed oil at rate of 15 barrels hourly with gas volume estimated at 1,500,000 feet daily when tester was used at 8747-75 feet. Evidence of water was noted in coring to 8805 feet, where test was made with packer at 8779 feet for recovery of 990 feet of the water cushion and 630 feet of sulphur water cut with oil and gas. The hole will be plugged back and cased for completion. Top of Devonian was called at 8760 feet with elevation at 3301 feet, being 339 feet low to the nearest Devonian well.

Sun Oil Company's Martin 1, C SE SE PSL 17, Block A-41, flowed heads of oil and gas before tubing packer slipped to indicate production from Lower Clear Fork broken pay at 6850-7036 feet.

Deep Tests: Stanolind Oil & Gas Company's Slaughter 1, Cochran County wildcat and 10 miles east by south of a failure in granite at 7356-7414 feet, was drilling dry lime at 10,225 feet without shows. In Crane County, Sinclair Prairie Oil Company's McKnight 1 was drilling shale and lime 9630 feet in the Upper Ordovician. Gulf Oil Corporation's John Edwards 1-E, 3 miles south by east of the Monahans deep field and in Ward County, was drilling lime at 10,067 feet, while Standard Oil Company of Texas' Durgin 1-X, South Ward field, was drilling dry lime at 7545 feet, having penetrated the Permian section. Phillips Petroleum Company's Powell-Powe 1, 2 2/3 miles west by north of the Fort Stockton pool, Pecos County, was drilling lime at 7475 feet on Ellenburger objective.

Pecos County: Humble Oil & Refining Company's Black 1, ¾-mile northeast of its Fort Stockton pool discovery, was spraying oil with 650,000-foot daily flow of gas through ¼-inch choke from broken saturation in the Yates at 2842-2918 feet.

Howard-Glasscock: Continental Oil Company and Group One Oil Corporation's Settles 1-D, offsetting regular Permian production, entered the Ellenburger at 9904 feet with elevation of 2696 feet, and was coring below 9929 feet without shows. This is the first Ordovician test for Howard County, and top of Ellenburger is 755 feet high to a 10,906-foot failure 9 miles west by south and in Glasscock County Settles 1-D temporarily passed up promising oil saturation in Crinoidal (Pennsylvanian) at 8928-34 feet.

Phillips Petroleum Company's McDowell-McDow 1, ⅞-mile southeast of the Glasscock County deep failure, was showing a small amount of live green oil with sufficient gas to require heavier drilling mud while drilling in Wolf Camp at 8470 feet. Hunt Oil Company's Wasson 1, C SW SW T&P Ry. 19, Block 29, T-1-N and 2¾ miles north of the Howard County sector of the Iatan-East Howard field, was making a production test at 4235 feet in Clear Fork saturation and porosity, topped at 4160 feet.

Fullerton Field: Magnolia Petroleum Company's Ralph 1-A, a mile west of regular Clear Fork production, entered the Ellenburger at 10,655 feet with elevation of 3344 feet, and had failed to indicate production in coring below 10,765 feet. The company's Bitler-Lowe 1-E, ½-mile northeast of production, swabbed 43 barrels in 9 hours after using acid in broken Clear Fork saturation at 6980-7066 feet. A commercial pumper is assured. Chalmette Peroleum Corporation's Lake Shore 1, midway between the Union pool and northeast extension of the Fullerton field, appeared doubtful for production in progressing to 7330 feet, although it recorded favorable structural position down to the Glorietta, topped at 5610 feet.

Gaines County: The Texas Company's Robertson 2, ¾-mile west of its Robertson pool discovery, flowed 103½ barrels oil, plus 12 percent basic sediment and water on 6-hour gauge through open tubing from the Glorietta at 5916-68 feet and Upper Clear Fork, new zone for the area, at 6360-6455 feet. The well would not flow until the deeper zone was tapped. Separate production tests are pending. Sinclair Prairie Oil Company's Johnson 1, near New Mexico border, entered the Tubb sand at 6640 feet with elevation of 3536 feet, and was drilling dry lime at 7775 feet.

Upton County: Humble Oil & Refining Company's Parrott 1, prospective flowing strike from Pre-Permian zone at 9550-76 feet, continued to log nominal shows of oil and gas in broken lime and shale in coring to 9696 feet. It is to continue to the Ellenburger as originally contracted.

The company's Gresham 1, a mile west by north of the Parrott test, was drilling at 6150 feet, checking about level in logging top of Yates at 2260 feet and lime at 3790 feet with elevation of 2707 feet.

West Virginia Decides to Join Interstate Compact

A resolution by the West Virginia legislature has authorized the governor to enter into an interstate compact to conserve oil and gas. Governor Meadows was commissioned last week by the resolution to join with other states in the compact.

SIMPLICITY IS THE FIRST REQUISITE OF SAFETY

Look for the strains that aren't there!

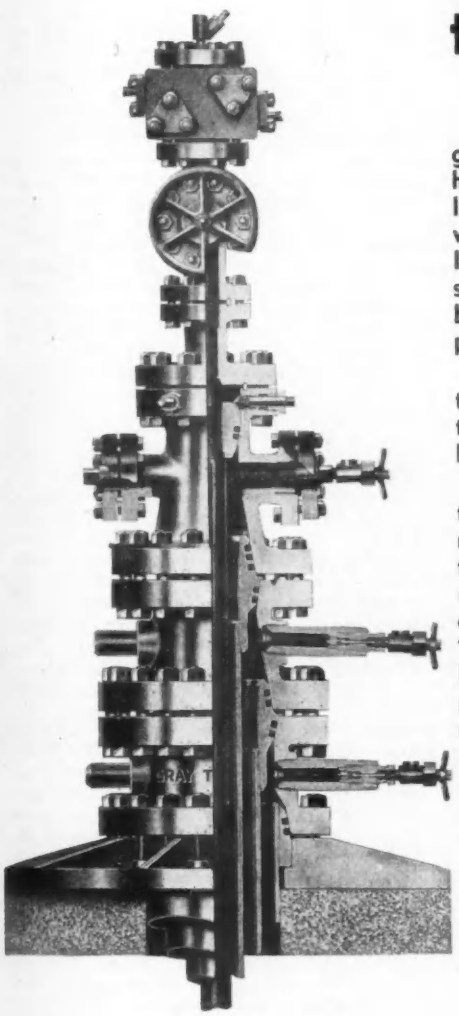

FIGURE 1A

Complete Well Head Assembly equipped with Composite Manifold, Valve Removal, Installation and Removal.

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The whole is greater than any of its parts.
Look for the strains that aren't there!

THE WHOLE IS GREATER THAN ANY OF ITS PARTS

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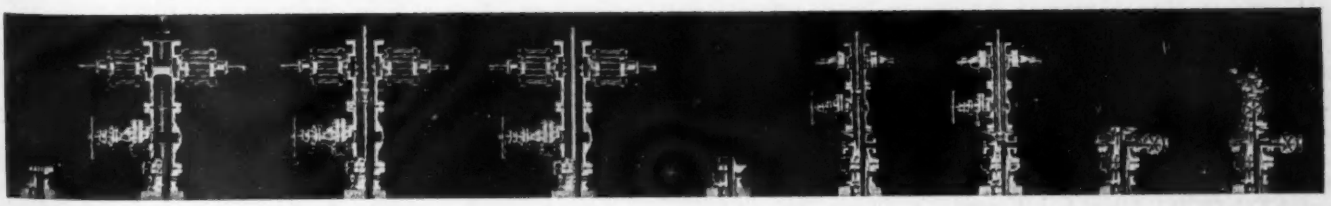

Casing Head Attached | Drilling | Running Casing | Casing Landed | Drilling Control Equipment Removed | Drilling-in and Running Tubing | Tubing Landed | Control Equipment Removed | Manifold Attached

North Texas

Cooke County Is Given New Simpson Producer

Cooke County has new Simpson producer; Wichita County well tests small show in Strawn sand; Clay County test logs nominal oil stain in Strawn.

Cooke County: Sinclair Prairie Oil Company's Putman 2, southeast offset to the Ordovician discovery in the northwest Walnut Ben field, swabbed 154 barrels of oil on 17½-hour test after using 3000 gallons of acid through perforations at 3 levels between 5352 and 5444 feet. Production is from Simpson, topped at 5352 feet, and also the upper Ellenburger.

Seitz-Comegys & Seit, Inc.'s, Parker 1, wildcat on the south side of the Walnut Bend area, tested water in the Simpson sand at 5682-5700 feet and was abandoned at 6005 feet.

Grayson County: The Pure Oil Company's Little 1-A, Gordonville area, was attempting to run electrical logging tool while bottomed in brown dolomite at 9917 feet in Ellenburger.

Wichita County: Consolidated Oil Company's Jones & Payne 1, southwest outpost for the Madden pool, tested a small show of oil with 200 feet of water in Strawn sand at 4415-23 feet, then drilled out to 4470 feet for nitro shot. The Bend lime zone at 5072-5138 feet proved dry.

Clay County: W. H. Hammon et al's Bryans 1, a mile south of Dean and an Ellenburger project, logged nominal oil stain and odor in drilling Strawn lime at 4487-99 feet and will core ahead. Nu-Enamel Pacific Corporation's Boyle-Gulf 1, northwest corner of Block 10, is showing for a southwest extension for the Joy field with oil saturated Strawn sand at 4021-46 feet followed by sandy-shale to 4048 feet. Pipe was set on top of the sand to complete.

East Texas

Smackover Prospect Plans To Test 3 Possible Zones

Smackover prospect in Falls County sets pipe to test 3 possible zones; failures listed by 2 Smith County areas.

Falls County: H. C. Cockburn et al's Gilliam-Cockburn 1, D. Barclay survey and a mile northwest of Stranger, set pipe on bottom at 7594 feet. Perforations will be made opposite 35-foot zone of porosity in the Smackover entered at 7134 feet, while a comparatively thin zone in the Travis Peak and Cotton Valley, topped at 4820 feet and 6190 feet, respectively, will be tested through perforations. Cash bonus ranging up to $35 per acre has been paid by companies on a southwest trend from the drilling block following the running of an electric log.

Sand Flat Field: W. R. Fair et al's Wells-Magnolia 1, J. W. Hitt survey, partially defined this Paluxy area in abandoning at 7509 feet, having entered the Paluxy at 7369 feet.

Hunt County: Ohio Oil Company's Popper 1, O. M. Roberts Survey and 2½ miles southeast of Cash, was coring at 7180 feet, logging fair to good porosity in Cotton Valley, topped at 7016 feet with elevation of 479 feet. Five previous Smackover lime projects in the county failed to encounter any appreciable porosity in beds below the Travis Peak.

Smith County: Phillips Petroleum Company's Grelling 1, 3000 feet northwest of its South Tyler pool discovery in the Rodessa at 9918-29 feet, has been abandoned at 10,896 feet in Travis Peak, topped at 10,420 feet. This failure caused a sharp reduction in the valuation of the area as a crude reserve. The company has discontinued title work on its large supporting block. Englander 1, 3½ miles south by west of the discovery, is awaiting heavy rig at 11,112 feet for deepening to 16,000 feet, or the Smackover. About 500 feet of the Rodessa was absent, and the dry Travis Peak was entered at 10,345 feet with elevation of 567 feet, being 100 feet high to Grelling 1.

Hopkins County: Sun Oil Company has withdrawn from the Pickton field as an operator through having assigned its J. M. Burns 1 with 141 acres to Humble Oil & Refining Company, with the former retaining ⅛ over-ride. Humble is operating 3 rigs, while Hunt Oil Company is drilling its second test. The 3 completions in the Bacon, or Upper Rodessa, revealed a maximum of 13 feet of pay, while Sun Oil Company's recent failure to the northeast and the discovery, which was carried to the Travis Peak then plugged back, established the absence of water-drive in the Rodessa series.

Panola County: Smith and Turner were scheduled to drill at the Panola Land and Development 3 in the George Gillespie survey, 8½ miles northeast of Carthage in the Carthage field. Chicago Corporation staked a new test, Allison 2, in the A. Moorman survey, 3½ miles southwest of Carthage.

Skelly Oil Company's Lewis Werner 1, Vaughan survey, 3 miles north of Deadwood, was testing again after acid treatment was given the Pettit zone at 5850 feet. The well was making considerable gas during production tests at several zones.

The company's Matthews 1, McFaddin survey, was drilling at 5870 feet and work was starting on the Lewis Werner which had been delayed by muddy roads. The Sallie Baker, Skelly's other operation in Deadwood, was rigging up in the Timothy Davis survey.

Continental Oil Company's Burnett Brothers 2, J. F. Cheairs survey, was drilling at 4150 feet. This is 2 miles west of Continental's 1, Cheairs, which went to 9300 and tested the Cotton Valley section before plugging back and completing the Trinity series.

North of Carthage, Union Producing's Thompson 1, in the Witherspoon survey, was making hole at 3375 feet.

Higher Award for Esso Boat Used in Normandy

Payment of $556,282.53, plus interest since April, 1943, at the rate of seven-eighths percent per annum, has been accepted by Standard Oil Company (New Jersey) for the tanker "Esso Delivery No. 11," which took part in the Normandy invasion, it was announced March 13 by the War Shipping Administration.

Lower Texas Coast

Brooks Given New Field; Kenedy Test Has Gas Shows

New oil field opened in Brooks County; Nueces County seems certain to have new producing area; potential test completed in Goliad County discovery; deep gas shows reported in Kenedy County wildcat.

Brooks County: Humble Oil & Refining Company's Dan Sullivan 1, wildcat 8 miles southeast of Falfurrias, has opened a new oil field, to be designated as the Maraposa field. It was completed from sand near the bottom of the hole. Total depth is 8545 feet with 5½-inch casing set on bottom, and perforated at 8537-43 feet. On 24-hour potential test it flowed 114 barrels of 40.7-gravity oil through a 3/32-inch choke with tubing pressure 1850 pounds, casing sealed. On preliminary test through ⅛-inch choke it produced 297 barrels a day with pressure 1900 pounds on tubing. The company has already made location for Dan Sullivan 2, Account 2, which will be 1320 feet north of the discovery and will go to 10,000 feet.

Humble's Dan Sullivan 1, Account 2, 17 miles southeast of Falfurrias, is drilling below 7686 feet in shale.

Kenedy County: Humble Oil & Refining Company's Charles M. Armstrong 2, a wildcat 1½ miles east of Armstrong, is drilling below 11,743 feet where the 5½-inch casing is set, following a test which is reported to have blown gas and some fluid through a 3/32-inch choke from perforations at 11,695-710 feet.

Kleberg County: Tide Water Associated Oil Company, discoverer of the new Ricardo field, has requested 40-acre spacing among proposed field rules, with 10-acre tolerance. It was also suggested that proration be on the basis of 25 percent per-well and 75 percent acreage.

Jim Wells County: Republic Natural Gas Company's Charles L. Scott, Trustee 1, wildcat 4 miles north of Falfurrias, is making a series of tests, none of which have been encouraging. It perforated at 6605-12 feet, recovering salt water and mud then perforated at 6389-94 feet, recovering mud and water. It squeezed and is preparing to perforate again at the same level.

Goliad County: Sun Oil Company's R. A. Thompson, discovery for the West Goliad field, has run potential test, and flowed 44.1-gravity oil at the rate of 314.6 barrels a day with no water showing. The well had blown out while coring at 11,192 feet, and the pipe was stuck after being blown up the hole to 11,149 feet, where it was cemented for completion. Drill-stem was a combination of 3½-inch and 4½-inch. It is producing through holes in the bit around core barrel and through slots on the driver, and through a 4-inch wing outlet.

Magnolia Petroleum Company is reported preparing to make a location on the Irvy 240-acre lease lying just south of the Sun discovery well, which is reported nearing completion date. The new wildcat would be drilled probably on a 12,000-foot contract.

Nueces County: Kilgore Developers' W. S. Morgan 1, wildcat 3 miles northwest of Driscoll, is flowing into the tanks, still not gauged accurately, but

is estimated good for 200 barrels daily through ⅛-inch choke and will open a new producing area. It is producing through casing perforations at 7330-38 feet. Total depth is 7954 feet with the 5½-inch casing at 7945 feet.

Lavaca County: Moran Oil Company has made location for another test in the Word field, its first since discovery during 1944. The new test, F. F. Kahanak 1, will be on a 40-acre lease in the James Kerr survey and is scheduled to 6500 feet. The discovery was completed at 5872-77 feet, making gas from shallow Wilcox.

Upper Texas Coast

Brazos County's Record Deep Well Still Drilling

New depth-record well still drilling in Brazos County; Navarro attempting to complete important Woodbine sand test in Trinity County; further evidence given of new gas-distillate producer in Matagorda County.

Brazos County: Phillips Petroleum Company's Fannie Schoeps 3, now the deepest well in the world and still drilling, has not released any recent drilling information beyond the expression that it was still "drilling ahead" late in the week. The latest reported depth was a week ago, when it was below 16,251 feet, and since drilling had progressed continuously, the well should be around 16,500 feet or deeper. The operators intend to hold the information rather closely until drilling is completed.

Trinity County: Navarro Oil Company's Edward R. Bolton et al 1, interesting and important wildcat in the upper edge of the Upper Gulf Coast area, was making tests in an effort to complete from the Woodbine formation, recovering some oil, but without having induced the well to flow late in the week. Casing had previously been set to 9908 feet, with total depth 10,507 feet, and following the drill-stem test which recovered 5364 feet of oil, a string of 3½-inch slotted liner had been set below the casing to bottom of the hole, where there is a more or less continuous broken section of woodbine sand. The sand is very hard and tight, however, and operators are now considering advisability of acidizing the section in an effort to get better recovery. Regardless of the outcome of this particular well, there is little doubt that it will stimulate drilling activity along this trend, which has already seen a brisk leasing campaign.

Matagorda County: Skelly Oil Company, Stanolind Oil & Gas Company and Tide Water Associated Oil Company's Hardy & Horn 1, wildcat east of Bay City, is still testing various sands, with indications that it is opening a gas reserve with a little incidental fluid condensate. On the latest test, with casing perforated at 10,232-238 feet, and packer at 10,200 feet, using two ⅜-inch chokes at bottom and one at top, it flowed 8 hours before being shut in, indicating a daily production of 35.57 barrels of water-white 41.7-gravity distillate and 5,980,800 cubic feet of gas, with flowing pressure of 1900 pounds at top. Gas-oil ratio is 168,142-1. The perforations have been squeezed off and another test is in preparation higher in the section.

This is the third section which has tested lots of gas and a little distillate, and no salt water has been in evidence.

Amerada Petroleum Corporation has made location for W. T. Morrison 1, projected 10,500-foot wildcat test in the Blessing area in the western part of the county, 3 miles southeast of Blessing. Location is on a 40-acre tract in the John Holmes Survey.

Tyler County: Potential test run on The Atlantic Refining Company's Houston Oil Company-American Republics Corporation 1, discovery for the South Hyatt field in the southwestern part of the county, showed a 24-hour flow of 399.6 barrels of 54.9-gravity condensate daily with ratio only 4850-1. Casing perforated at 8379½-82 feet in the Wilcox zone.

Harris County: Eltex, Limited, has extended the Spring field a location north with Walton 1 in the Wiley Smith Survey, bringing it in through perforations at 6237-40 feet, making 217 barrels of 39-gravity oil daily through a 10/64-inch choke with tubing pressure 1100 pounds and casing pressure 2100 pounds. This is the third producer for the field, which for a while seemed a 1-well proposition.

At Clear Lake field, Humble Oil & Refining Company's Hutcheson 9, deep test is still drilling, now 11,666 feet in shale.

Hardin County: Houston Oil Company and American Republics Corporation's Hardin Fee 2, 1½ miles south of the gas-distillate discovery at Village Mills in the north edge of the county, is preparing to make a production test in the discovery Cockfield sand after failure to produce from the Wilcox. Squeeze jobs have been made at 5785-88 feet and 5804-14 feet in preparation for perforating in between. Tests at 9410-18 feet showed salt water and a test at 9012-20 feet showed only mud.

South Louisiana

New Oil Field Is Opened South of New Orleans

The California Company opens new oil field south of New Orleans; new well completed in Reddell field; second Iota well nearing pay.

Jefferson Parish: The California Company's E. P. Brady 1, wildcat midway between the Barataria and the Delta Farms field, has perforated casing in the Miocene sand at 9897-9904 feet, and opened a new oil field for the area. On initial gauge it flowed at the rate of 230 barrels of 36.2-gravity oil daily through a ⅛-inch choke with gas-oil ratio only 400-1. The new area will be known as the Brady field. Total depth of the discovery well is 11,035 feet, and 7-inch casing had been cemented on bottom several weeks ago. The rig was moved off to another operation before the production test was made on the new discovery.

Acadia Parish: Union Sulphur Company's L. F. Medlenka 2, second test in the new Iota field, and an east offset to the discovery well, is running electric log for correlation purposes after drilling to 9009 feet. At this depth it is still above the producing pay, the discovery well having been completed in perforations at 9380-90 feet after having also shown for a producer in perforations at 9664-76 feet.

Union Sulphur Company's Marvine Kahn, wildcat in the Bayou Mallet area, is setting 7⅝-inch protection casing to 9160 feet after running electric survey, and will drill on to complete contract at 10,300 feet.

St. Martin Parish: Stanolind Oil & Gas Company's Iowa-St. Martin Land Company 1, on the Sect. 28 dome, is completed through perforations at 10,468-490 feet, showing a flow of 18.63 barrels of 32.3-gravity oil on preliminary 3-hour gauge. It showed tubing pressure of 580 pounds. Depth is 11,240 feet, with 7-inch casing at 10,950 feet.

Yegua Corporation's Guchereau 1, wildcat in 71-9s-5e, has been spudded during the past week and is drilling below the 215 feet of 16-inch conductor pipe.

Iberville Parish: Stanolind Oil & Gas Company has completed Wilberts Minerals Corporation 1 in the Bayou Blue area, at total depth 7161 feet, where it went into salt. With casing perforated at 7135-40 feet it flowed at the rate of 195 barrels daily through a ⅛-inch choke with tubing pressure 1200 pounds and casing pressure 1150 pounds.

Humble Oil & Refining Company's wildcat at Bayou Goula, Schwing et al C-1, is drilling below 11,435 feet in shale.

Evangeline Parish: Continental Oil Company & Humble Oil & Refining Company's W. D. Haas Estate 1, in the Reddell area, has been completed in the Tate sand flowing at the rate of 121 barrels a day through a 12/64-inch choke with tubing pressure 3000 pounds and gravity of the condensate 55.2 degrees. Casing was perforated at 9796-9806 feet in a 50-foot sand section bottomed at 9844 feet. Depth of the well is 9866 feet with casing cemented on bottom.

St. Landry Parish: Gulf Refining Company's E-2 Haas-Hirsch in 22-6s-7e is a new producer in the Krotz Springs area. It perforated casing at 10,050-054 feet and has been completed as a gas-condensate well, making 162 barrels of condensate daily through a 5/32-inch choke with pressure of 3400 pounds on the tubing.

In the North Cankton field, Sun Oil Company's Boagni B-2 is running electric logging survey after drilling to 10,500 feet in shale with hard sand streaks.

Sun's Gilbeau-Lavergne 1, in the Shuteston field, is flowing 119 barrels of oil daily through a ⅛-inch choke with tubing pressure 1200 pounds. Casing is perforated at 9510-14 feet.

Cardinal Oil Properties Bought by Tulsa Firm

Helmerich & Payne, Inc., Tulsa, has acquired the Cardinal Oil Company, owner of extensive oil and gas properties in West Texas, through the purchase of controlling interest in the capital stock for a consideration approximating $4,000,000.

George D. Morgan of San Angelo organized the Cardinal Oil Company and will continue as a director of the firm, which will retain headquarters in San Angelo under the new ownership.

Cardinal is producing 3000 barrels of oil daily from 236 wells in Pecos, Upton and Howard Counties and operates a crude gathering and natural gas pipe line system in Pecos County.

North Louisiana

Richland Parish Field Given New Producer

Natchitoches offset to be abandoned; Delhi field has now producer; gas-distillate production indicated in Benton area.

Natchitoches Parish: Feazel and Loe will abondon McIntyre 1, NEC 12-13-8w. The well was drilled to 3334 feet, perforated and tested at 3328 feet to 3331 feet with no oil recovery.

The McIntyre well was an offset to The California Company's Morrison 1, same section, drilled to 5300 feet and temporarily abandoned after an unfavorable report on tests at 3820-38 feet. Feazel and Loe have another location on 40 acres in the same area. Another wildcat for this parish will be Ben H. Morgan's G. T. Lock's et al 1, in SE NW 33-10-10w, with plans to go to the Woodbine.

Red River Parish: C. H. Tuttle's Fee 1, 17-13-10w, tested water and shut down at 1960 feet. The Carter Oil Company is drilling shale at around 1780 feet in Colbert 1, 16-13-9. Panhandle Refining Company is reported on location at Whitney Corporation 1.

Richland Parish: The Delhi field gained another producer with the completion of C. H. Murphy and Sun Oil Company's J. E. Holt 2, 21-17-9e, reported flowing 265 barrels of 41.8-gravity oil. Perforations were made at 3304-12 feet and depth is 3341 feet. New wells to be drilled are: Murphy-Sun Oil Company's J. E. Holt C-1, SE 21-17-9e, and C. W. Hanslip's Fee 1, SW 22-17-9e. Murphy-Sun is coring the Ella M. Barrier 2, 22-17-9e, below 3175 feet and Ella M. Barrier 3, same section, below 3319 feet. A 9⅝-inch casing has been set at 382 feet at Gulf Refining Company's Mrs. Dot G. Hoover 1, 21-17-9e.

Bossier Parish: In the Benton discovery area, Vaughn and Hurley were coring at 8400 feet in Ellerbe 1, 3-20-13w. A drill-stem test indicated gas-distillate in the "D" sand of the Cotton Valley, but was reported to have missed the Bodcaw sand. Barnsdall's Welori, 20-20-12, was reported drilling below 5634 feet.

Caddo Parish: James Forgotson was moving in on Cook Unit 1, 10-19-6. J. M. Lambert's Self et al 1, 12-20-15w, had good show of oil and gas.

Claibrone Parish: Union Producing Company's Johnston U. A-1, 17-21-14, was perforated at 5208-10 feet and made gas, oil and water, squeezed off, and will reperforate. Big West Company's King Patton U. 1, 11-20-5w, hit shale and lime at 7004 feet. Black shale was being drilled at Lyons and Prentiss' H. E. Patton, 36-21-5w, at 3231 feet.

De Soto Parish: Oakes-Easton-Lon-Gan's Ramsey is awaiting orders. Arkansas-Louisiana Gas Company's Dema P. Furlow 1, 25-12-16, is under water due to recent heavy rains. E. M. Self et al's Todd 1, 34-12-13, is drilling below 1500 feet. Arkansas Fuel Oil Company's L. L. Beene 10, 15-23-8, is waiting on cement at 3526 feet.

Union Parish: Interstate Natural Gas is scheduled to drill Fee 168, NW 15-20-3e, and Fee 169, SW 10-20-3e. No. 164 has been completed but is reported waiting on gauge.

Caldwell Parish: Shell Oil Company set 5½-inch casing at Shell-Louisiana Central Lumber Company 1, 31-15-3e, bottomed at 11,615 feet. Six hundred twenty-five sacks were squeezed at 9307-10 feet.

Franklin Parish: American Liberty Oil Company is coring below 3573 feet at J. N. Kny.

Madison Parish: Woodley Petroleum Company's Montgomery 1, 14-15-8e, set 10¾-inch casing at 548 feet and was below 4000 feet.

Tensas Parish: A string of 9⅝-inch casing was set at The Carter Oil Company's Butts 1, 14-10-10e, at 2007 feet and drilling continued at 3845 feet. Shamrock Oil and Gas Corporation is building roads to the Panola Company, Ltd., 1, 34-13-12e. Magnolia Petroleum Company set 13⅜-inch casing at the Shelley Marks 1, 29-11-10e, at 298 feet. Union Producing Company's Penrod Jurden 14, 20-11-10e, was testing at 3039 feet and total depth had been reached at the 8544-foot mark. H. L. Woods set 5½-inch casing at 8410 feet at Shelley 1, 29-11-10e, and was preparing to perforate.

Editorial Index to 1944 Issues Available Upon Request

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Plant in Operation

Operations which by March 20 will reach capacity have been in progress at the Haynesville Recycling plant since the middle of January, according to J. R. Butler, general manager.

The plant will take care of about 15 million cubic feet of gas per day. It is owned by the Haynesville Operators Committee.

The plant is working with some 180 wells and at full capacity will continue to carry these wells plus all new Pettit zone operations.

Arkansas

Southeastern Section Has Brisk Leasing Play

Arkansas is having an increase in new locations and a brisk leasing play in the southeastern section; first wildcat for Drew County this year has been staken by A. E. McKeirnan et at at T. C. Deal 1, C NW SE 29-11n-7w, 7 miles northwest of Monticello townsite, and may go to 4500 feet; Stephens field will have 2 new operations, one each on the Columbia and Ouachita Counties sides; Barnsdall Oil Company and Sohio Petroleum Company have begun operation at Moore Heirs 1, NW SE 32-17-

TENSAS

If you were going down into the Louisiana Tensas Swamps for a deer hunt, you'd want to do your own shooting, of course. But what sort of a guide would you prefer? Native, or sort of acclimated?

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24 in the Patton field of Lafayette County; and Hickey and Wallingsford are rigging up at Union Sawmill 5, 13-18-14, in the Hillsboro field of Union County.

Union County: Tide Water Associated Oil Company and Seaboard Oil Company of Delaware are building roads to Grace Griffin 1, C NW SE 33-18s-16w, in the Wasson area, southwestern sector of the county. The test will be taken to the Smackover lime, and will be the third deep test in the area. Standard Oil Company of California abandoned an 8020-foot test in C SE SE 29-18s-16w, 3 years ago, and Delta Drilling Company had a dry hole in a 7970-foot Smackover test in SE NW 32-18s-16w.

Pope County: Stanolind Oil & Gas Company has resumed drilling after a delay of several weeks to switch from standard tools to rotary, and has reamed B. G. Maxwell 1, C SE SE 18-8s-18w, at 4325 feet. Drilling continues below 4762 feet; the test will be carried to the Arbuckle if necessary, and so far there have been no oil shows.

Miller County: Skelly Oil Company is coring in Texarkana National Bank 1, SE SE NW 32-16s-26w, deep test across the fault line in the Fouke area. A core from 5120-50 feet in the Rodessa section recovered 7 feet of oolitic lime with slight oil stain. Some showings of oil have been logged but none indicate commercial production.

Columbia County: Tide Water completed B. Davis 1, C NE NW 17-18s-19w, in the West Atlanta field, for 127 barrels of oil per day through ⅛-inch choke on tubing. Tubing pressure during test was 1300 pounds, and no formation water was showing. Production is from the Smackover lime, topped at 8247 feet after perforating with 24 shots from 8284-87 feet. Porosity in the lime is from 8257-89 feet, total depth.

Skelly's Sallie Ferguson 1, 18-18-19, is at 4225 feet, with 9⅝-inch casing set at 3400 feet.

Tide Water is moving in at Pearce B-1, 3-18-20.

Southeastern

Mississippi's Soso Field May Be 3-County Area

Soso may develop into 3-county Mississippi field; Marion County test completed as gas-condensate well; Lamar County has new dual completion; new pay horizon indicated in Gwinville field; Lincoln County may get new producer.

Jasper County: The new Soso field which centers around Gulf Refining Company's Edwards-Bailey 1, may develop into a 3-county field. Counties involved are Jesper, Jones, and Smith. Gulf is building derrick and moving in rig for W. A. Valentine 1 in Jones County across the line from the Edwards-Bailey unit.

Edwards-Bailey 1 is reported to have a potential open flow of gas of 56,000,000 cubic feet a day. Production is from 60 perforations at 6590-6600 feet in the Christmas sand zone of the basal Eutaw horizon, and on one 24-hour test through a 3/16-inch choke the well flowed 65 barrels of 67-gravity condensate and 2,083,656 cubic feet of gas with gas-oil ratio of 32,170-1. The well flowed through a 3000-pound indirect heater

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Hinds County: The Carter Oil Company's wildcat, W. G. Davis 1, is still having trouble with testing tools. Shows of gas slightly colored with oil were reported at 8270-80 feet. Packer failed each time in attempted drill-stem tests at 8269-80, 8265-81 and 8277-92 feet.

Issaquena County: The California Company's Mississippi Alluvial Farms 1 was preparing to test oil stain in the Smackover lime. Five and one-half-inch casing has been set and plug drilled. Test was to be made through 2½-inch tubing.

Covington County: Warren Petroleum-Roeser & Pendleton's Joe V. Johnson 1, is dry and abandoned. Well was drilled to 9323 feet with no shows of gas or oil, but plenty of salt water. An electrical log was run, but no sidewall cores taken before abandonment. It ran high structurally, but none of the producing horizons showed oil.

Marion County: Humble Oil & Refining Company's Evans 1 has been completed as a gas-condensate well. Efforts to reduce gas-oil ratio by squeezing were unsuccessful. On 24-hour test through 5/32-inch choke on tubing well flowed 72 barrels of dark 52-gravity condensate with gas-oil ratio 14,750-1, and 3000 pounds tubing pressure.

Lamar County: The Superior Oil Company's Batson 1 has been brought in as a dual completion, extending production in the Baxterville Field, 1½ miles southeast. Through ¼-inch tubing choke the well flowed 582 barrels of 16-gravity pipe line oil per day from open hole at 8772-8846 feet.

Jeff Davis County: Gulf Refining Company's V. G. Gholar 1 has indicated new pay horizon below present levels of the Gwinville field. A drillstem test at 8265-81 feet, ¼-inch choke open 15 minutes, recovered 700 feet of 41.2-gravity oil and 2000 feet of salt water on a drill-stem test at 8353-61 feet with ¼-inch choke open 15 minutes, the well recovered 8 gallons of amber condensate. Salt water was carried in all cores taken from 8281 to 8351 feet. Total depth is 8364-71 feet.

Smith County: Gulf Refining Company's E. G. King 1, deep test, has reached 7000 feet with no shows. Latest cores taken at 6814-6860 feet showed porous sand with a few tight streaks and salt water.

Lincoln County: The California Company's M. R. Douglas 1 is indicated as a producer. Casing was perforated at 10,552-80 feet with 168 shots, and 2½-inch tubing run to 10,565 feet with packer at 10,550 feet, swabbed in, it flowed on 3/16-inch choke. Preparations are being made to pull tubing and take drill-stem test.

Yazoo County: Union Producing Company's Jennie Stevens 21, a deep test in the dwindling Tinsley field, was reported to have a good show of oil in a drill-stem test from 7416-21 feet, said to be in the lower Cretaceous. Previous production has come from six sands above 7000 feet.

Alabama

Winston County: Glen D. Rose's Z. A. Boschell 1 has been shut in. There were reported shows of gas at 1377 and 1830 feet and oil shows at 1470, 1500, 1705 and 1780 feet. The well was acidized with 3000 gallons and made an estimated 3,000,000 to 4,000,000 cubic feet of dry gas on open flow, but has not been gauged. Shut in pressure is 500 pounds.

Greene County: J. L. Cate's Number 1 J. A. Steel 1, wildcat is moving in materials.

Choctaw County: Hunt Oil Company's Maggie Utsey 2, Gilbertown field reached 3593 feet and was plugged back to 3533 and swabbed, but would not flow. Pump is to be installed.

W. O. Woodward's Mary Green 2 is waiting on workover rig. Well was plugged back to 3540 feet and swabbed salt water with slight oil show. Later it was drilled out to 3542 feet and perforated at 3520-27 feet with 24 shots. It swabbed dry.

Florida

Gulf County: The Pure Oil Company's C. C. Hopkins 2, a wildcat started early this year, is drilling below 6850 feet with no shows reported.

Collier County: Humble Oil & Refining Company's Gulf Coast Realty Company 4, deep test in the Sunniland field is drilling below 8700 feet. No oil shows have been reported.

Georgia

Toombs County: Tropic Oil Company's Gibson 1, begun late last year, has reported shows of oil in samples taken at 2145 feet. Electric log was run to 2301 feet and 9 sidewall cores taken with no show. It is drilling below 2400 feet.

Wayne County: Harry Byers' Dean 2 is drilling below 325 feet.

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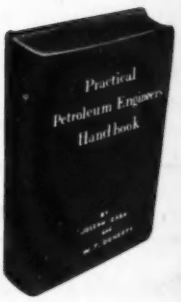

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California

Two Long Beach Tests Are Below 10,000 Feet

Shell Oil Company, discoverer of Long Beach field in Los Angeles in 1921, is drilling 2 deep tests there. Alamitos 48-A has reached 11,200 feet, using company crew and company rig. A string of 9⅝-in casing has been cemented at 7021 feet, leaving ample hole space for much deeper drilling. Stakemiller-Rose is below 10,600 feet, with 13⅜-inch casing landed at 1356 feet. Officials have no opinion on how much more hole will be drilled.

Orange County: At Costa Mesa, on the bluff above the old heavy-oil wells drilled at Newport Beach in Los Angeles County, a new shallow drilling campaign has begun. Delany Petroleum Corporation, 1 of 3 companies taking part, has completed a small well. An attempt was made 20 years ago to develop shallow production by sinking a tunnel, but the venture was abandoned.

Much interest attaches to the deep test being drilled in the old Los Hills shallow field. Sandard Oil Company of California's deep test has reached 7800 feet and has landed 9⅝-inch pipe at 7867 feet, successfully getting through high-pressure water.

Army Adopts New Unit To Transport Gasoline

Adoption by the Quartermaster Corps of a new truck-trailer unit to be used in the transportation of gasoline and other petroleum products has been announced by the War Department.

Production of the new 5000-gallon units, whose capacity will more than double that of the semi-trailers they are to replace, is to begin immediately. However, it is expected that some months will be required to produce the trucks and trailers in sufficient numbers to permit their widespread use in overseas theaters.

The truck portion of the new unit is of six-ton capacity, with six wheels, while the trailer section is of 7½-ton capacity and also has six wheels. Truck and trailer each will carry a maximum of 2500 gallons of gasoline.

The equipment will be used principally by quartermaster heavy truck companies which are organized as petroleum transportation units. When the New carriers are produced in sufficiently large quantities, they will take the place of the 2000-gallon semi-trailers which are now part of the organic equipment of these companies.

Illinois Basin

Three Wildcats in Illinois Successfully Completed

Flood conditions and muddy roads bring operations to standstill in Kentucky and Indiana and slow activity in Illinois, where 3 wildcats are successfully completed.

Clay County: Magnolia Petroleum Company's Stanley 1, SW SW SE 12-4n-8e, 5½ miles west of the Dundas pool, on initial test flowed 325 barrels

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Oiling the sinews of war is a tremendous job, but the petroleum industry is performing miracles in getting it done. To keep production up, oil men are called to the four corners of the country, and they are saving precious hours of time with fast flying, dependable planes. When it comes to keeping those planes in top flying condition, oil men know that Southwest Airmotive is their most dependable source of efficient, *fast* maintenance service. Finely equipped shops, expert craftsmen and years of experience in overhauling every kind of engine and plane have given Southwest Airmotive the skill and means of giving the fastest, most dependable civilian aviation maintenance service in America.

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D. Harold Byrd, 1110 Tower Pet. Bldg., Dallas, Texas
Lion Oil Co., El Dorado, Arkansas
Continental Oil Co., Ponca City, Oklahoma
Carter Oil Co., Tulsa, Oklahoma
E. B. Germany & Son, Highland Pk. Shopping Village 25½, Dallas, Texas
Gulf Oil Corporation, Dallas, Texas
Halliburton Oil Well Cementing Co., Duncan, Oklahoma
Humble Oil & Refining Co., Aviation Division, Humble Bldg., Houston, Texas
Noble Drilling Co., Tulsa, Oklahoma
Parker Drilling Co., Tulsa, Oklahoma
Phillips Petroleum Co., Bartlesville, Oklahoma
Premier Oil Ref. Co., Longview, Texas
Seismic Exploration, Inc., Houston, Texas
Shell Oil Co., New York, N. Y.
Shell Pipe Line Corp., Houston, Texas
Socony Vacuum, New York, N. Y.
Superior Oil Co., Oil and Gas Bldg., Houston, Texas
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of oil in 24 hours after 2000 gallons of acid in the Rosiclaire lime at 2995 feet.

White County: H. H. Weinert's Kisner 1, SW NE SE 31-5s-9e, 2 miles north of the Stokes pool, was completed for 187 barrels of oil in 24 hours on pump after a total of 5000 gallons of acid. Well is producing from the Rosiclare lime.

Edwards County: Aetna Oil Company's Greathouse 1, SW NE NW 23-1n-10e, about 3 miles southwest of Salem in wildcat territory, pumped 150 barrels of oil in 24 hours on initial test of O'Hara lime at 3247-54 feet. The well was treated with 5000 gallons of acid. It is southeast of the Maple Grove pool and east of production in the Bennington pool. Operator has staked location for an offset to the discovery, the Greathouse 1, NE NE NW 23-1n-10e.

Washington County: Harry Hubbard's Doolin 1, SE SE SE 23-5s-5w, a wildcat test, is shut down awaiting orders at 2412 feet after testing a dry Devonian break at 2340-45 feet.

Richland County: A. J. Slagter has staked location for Lambert 1, NE NE NW 20-2n-14w, in wildcat territory which has had no drilling operations in several years.

Madison County: Shell Oil Company completed the best well in the Marine pool during the week. It was Eldring 1, 16-5n-6w, which made 100 barrels of oil in 24 hours on pump from Devonian lime.

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Michigan

Deep River Pool May Get Northwest Extension

Deep River field may get extension; Isabella County pool extended; Tuscola County test logs oil shows.

A mile northwest extension to the Deep River field or a new pool prospect was given encouragement with Wicklund and Bernhardt's Mutch 1, SE NE NW 1-19n-3e, Arenac County, showing free oil 24 feet in the Dundee. Drilling was suspended for a production test.

Isabella County: The twenty-third producer in the pool, Maguire, Inc.'s Hoffman 1, N½ NW NE 29-16n-6w, averaged 7 barrels an hour pinched from Dundee lime to extend the pool 1320 feet north. While flank wells have logged structure pitch up to 50 feet, so far no failures have been encountered in the development of the pool.

Tuscola County: Shell Oil Company's Hutchinson 1, NE NE NW 21-14n-10e, wildcat, logged Sylvania at 3568 feet and cored oil shows at 3700-50 feet.

Rocky Mountain Area

Colorado Test May Be Important Discovery

Rio Blanco County, Colorado, test may be important deep zone discovery; Sheldon Dome has oil in Wyoming wildcat; small showing of oil obtained at Overland Dome; oil in Dakota tested.

Rio Blanco County: What appears to be an important deep zone discovery is the joint test of The Texas Company and California Company's Unit 20, NE SE NE 34-3n-94w, Rio Blanco County, Colorado. In the first deep test below the Sundance sand, the Weber was topped at 8230 feet with the upper portion found hard and dry. At 8301 feet the sand was soft and saturated in recovered cores. Coring will be continued through the section, estimated to be 400 feet thick. Wilson Creek is Colorado's largest producing field, having 19 wells in the Sundance sand at 6850 feet. During 1944 the field produced 1,400,000 barrels.

Wyoming

Sheldon Dome: Kerlyn Oil Company and The Carter Oil Company's Tribal Indian Lands 1, NE NE NE 16-5n-2w, Fremont County, cored from 6267-71 feet and in 4 feet of recovery found 2½ feet saturated with light green oil. A drill-stem test from 6265 to 6580 feet, open 1 hour, recovered 45 feet of oil and 133 feet of oil-cut mud. Saturation is believed to be in a stringer sand in the Dinwoody section just above the Embar. This discovery adds to the possibility of finding further production in the deeper Tensleep sand, main objective of the test.

Carbon County: Cherry and Kidd's D. M. Morris 1, SW SW NW 30-20n-83w, had a show of oil in the G-P sand zone above the Niobrara formation. From 3550 to 3555 feet a half bailer of green oil was recovered in 7 hours. The test is drilling with cable tools at 3581 feet in an effort to find commercial production within a depth of 4000 feet.

After finding the Madison limestone dry in a deep test to the Cambrian at

5345 feet, Sinclair Wyoming Oil Company's Mahoney C-7, C N½ 34-26n-88w, has plugged back to 4508 feet in the Tensleep sand. From this depth a swabbing test has shown 14 barrels of fluid in 17 hours with a reducing rate of water. Pumping equipment was being installed.

Midway Dome: Kerlyn Oil Company's Government 1, NE SE NE 23-35n-79w, near Casper, topped the Dakota sand at 5939 feet. A drill-stem test from 5964 to 5979 feet, open 1 hour, recovered 30 feet of oil and 65 feet of drilling mud. Other wells drilled at Midway produced about 200,000 barrels of oil with water from the Dakota, while the present test is being made to determine production possibilities in the Tensleep, expected below 8000 feet.

Park County: Continental Oil Company's Ida Goodstein 1, NE SE SW 20-57n-99w, 4 miles south of the Elk Basin field, has indications of being an oil well in the Tensleep sand which was entered at 6971 feet. Eighteen feet of saturated cores were recovered and a drill-stem test will be taken before the entire Tensleep section has been cored.

South Elk Basin is unusual in that it is a seismograph structure just 4 miles from the large exposed Elk Basin anticline. In drilling to the Tensleep, Continental discovered an estimated 15 to 20 million cubic feet of gas per day in the second Frontier, Dakota and Lakota sands. In the Embar some streaked saturation was found and a drill-stem test from 6921 to 6963 feet, open 40 minutes, recovered 70 feet of mud with a slight show of oil. Top of the Embar was 6929 feet. Little importance is placed on any production from the Embar as the main productive zone is expected to be from the Tensleep.

WESTERN CANADA

Successful Completion on Alberta Plains Promised

Year's first successful completion looms for Alberta Plains; oil rights on 500,000 acres granted.

Mid-Continent Oil & Gas and East Crest Oil Company's Conrad 1 was preparing for production as the first successful 1945 wildcat completion in Western Canada.

The well, in 1sd 2 8-6-15w4, reached Ellis sand (Jurrasic) March 10 at 3152 feet, and halted coring at 3158 feet. The bottom 2½ feet of core showing good porosity and oil saturation. On 75 minute drill-stem test, water-free oil rose 1440 feet in the 4½-inch pipe. Gravity tested 27.2 degrees. Seven-inch casing has been set to the top of the sand.

Backers of the well, which is a mile north and ¾-mile west of the most northerly of the 3 Standard Oil Company of California Conrad producers, expect recovery on pump to be substantially over 100 barrels daily. This expectation is supported by results at Standard's Conrad 77-33B, best of that company's Conrad producers. It showed an oil rise of 1200 feet on drill-stem test, commenced pumping in November at 175 barrels daily and was yielding 165 barrels daily at last report.

A dry hole, drilled by Standard, lies midway between the Standard producers and the new Mid-Continent-East Crest well, and around ¼-mile west.

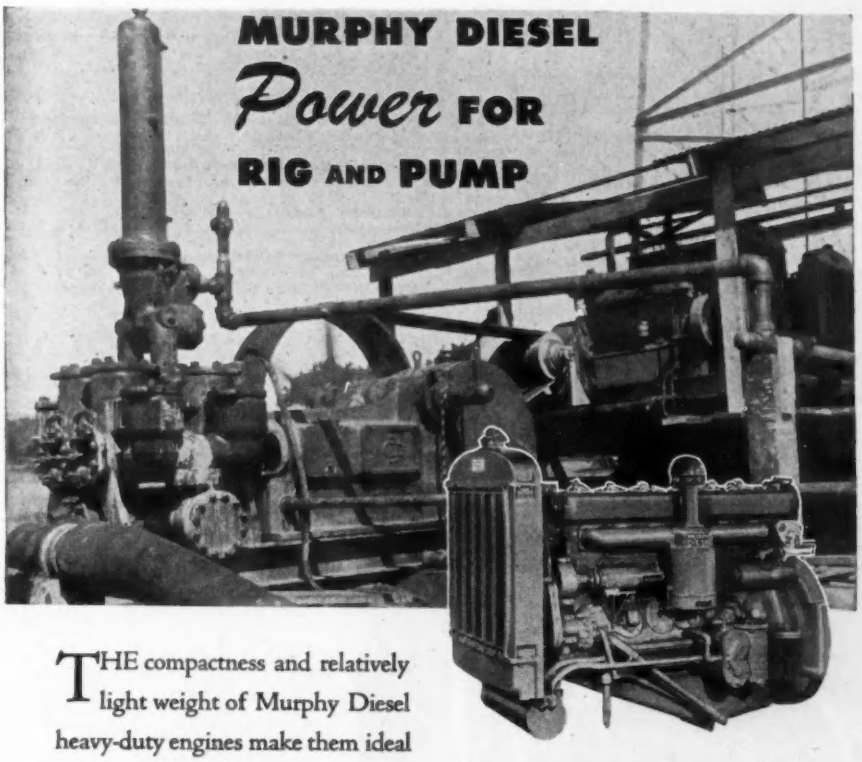
More than 500,000 acres are covered by reservations on Crown oil rights granted by the Alberta government.

Standard has taken up a reservation covering 199,200 acres on the Southeast Alberta Plains, to the east of the Taber and Conrad oil areas. McColl-Frontenac Oil Company (Canadian affiliate of Texas company) has secured a reservation on 195,096 acres tying on to the east of the new Standard block, while McColl-Frontenac and British Dominion Oil & Development Corporation have jointly taken up 19,459 acres adjoining their current 22,000 acres under lease in the Endon area on the southeast Plains, where a joint well is being drilled.

In the Southern Foothills, Gulf Research & Development Company has taken up 78,380 acres of Crown rights tying on to the west of the 95,000 acres of Blood Indian Reserve rights acquired a few months ago.

Royalite Oil Company, subsidiary of Imperial Oil, has taken up 2 Crown reservations totalling 37,431 acres in the Southern Foothills west of Calgary. The block ties on to the east of the Shell of Canada Jumping Pound holdings (scene of an important 'wet gas' strike last December) and to the east of Royalite's Wildcat Hills holdings.

In the Central Alberta Foothills, in the Ram River area, John Moar has taken up a reservation on 19,928 acres and James Ryan has secured 20,000 acres.



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U. S. Exploratory Completions

ARKANSAS WILDCATS

Miller County—Failure: Atlantic's Montana Realty Co. 1, c sw se 17-17s-28w, elev 220 ft, Midway 710 ft, Arkdelphia 1175 ft, Saratoga 1950 ft, Base Annona 2350 ft, Tokio 2700 ft, M. Anhy 5015 ft, James 5650 ft, Pettit 5890 ft, Travis Peak 6000 ft, Cotton Valley 7102 ft, Buckner 8845 ft, abnd in igneous mat 10,006 ft.

Newton County—Failure: W. S. King's J. Loyd Shouse 1, 391 n of swc sw ne 36-17s-19w, so 410-450 ft, abnd 715 ft.

CALIFORNIA WILDCATS

Fresno County—Failure: Amerada's Cerioni 74-15, 15-17s-19e, Riverside area, no test, abnd 8500 ft.

Kern County—Failures: Western Gulf Oil Co.'s Bloemer 1, 3-30s-28e, Magenden area, Temblor 4200 ft, Valoulineria 6000 ft, abnd 6025 ft.

Shell's Parker Fee 87-16, Ant Hills area, Oicese sand 2364 ft, base 3256 ft, unidentified sand 4054 ft, abnd 4408 ft.

Richfield Oil Corp.'s United B, 47-28, Buena Vista Hills area, 28-31s-23e, abnd 4855 ft.

General Pet. Corp's Sell One 37, 26-28s-27e, Kern Front area, abnd 2451 ft.

Kings County—Failure: Pacific Oil & Gas Dev. Corp.'s No. 34-17, 17-24s-18e, Pyramid Hills area, abnd 940 ft.

Los Angeles County—Failure: Associated Pipe & Engr. Co.'s Simons 1, 1-3s-11w, abnd in grey sand 5464 ft.

San Luis Obispo County—Failure: Richfield Oil Corp.'s Temblor Hills Unit 2-1, 27-32s-22e, abnd 4472 ft.

Ventura County—Failure: MacDonald-Burns & Norris' No. 4, Culbertson 1-4, 12-1n-22w, Oxnard area, abnd 4344 ft.

FLORIDA WILDCAT

Santa Rosa County—Failure: Hunt Oil Co.'s Foshee-Miller-Mills Lbr. Co. 2, c se se 8-5n-28w, abnd 6597 ft.

ILLINOIS WILDCATS

Edwards County—Failure: Phillips' Saxe 1, ne sw se 17-1s-10e, abnd 3380 ft.

Effingham County—Oil Discovery: Leland Waggoner et al's M. Wood 1, se sw se 28-6n-7e, McCl 2863-68 ft, 510 bbls, td 2868 ft.

Gallatin County—Failure: Gulf's Lula Egli 1, sw se nw 29-7s-10e, abnd 3004 ft.

Marion County—Failure: A. R. Floreen's March 1, sw se ne 35-1n-2e, abnd 2382 ft.

Wayne County—Failure: Pure's A. A. Smith 1-A, se se se 17-1s-7e, abnd 3337 ft.

Wayne County—Oil Discovery: Pure's E. E. Grubb 1-A, sw se sw 4-1s-8e, Rosi 3122-26 ft, flow 42 bbls, td 3269 ft.

White County—Oil Discovery: N. V. Duncan's A. G. Aud 1, sw nw ne 27-6s-9e, pump 20 bbls, McCl 3010-16 ft, td 3017 ft.

INDIANA WILDCATS

Dubois County—Failure: Texas Co.'s Feldmeyer 1, se sw ne 21-3s-5w, abnd 1175 ft.

Posey County—Failure: Bristol Hackbush's Joseph Reis 1, nw ne se 24-5s-12w, abnd 2770 ft.

Vanderburg County—Failure: Mohawk Drlg.'s Oscar Riggs 1, nw sw ne 11-5s-10w, abnd 2282 ft.

KANSAS WILDCATS

Graham County—Oil Discovery: Helmerich & Payne's Luck 1, nec 13-8s-22w, KC li 3414-38 ft, pump pot 328 bbls, td 3610 ft.

McPherson County—Failure: E. K. Carey et al's Leffler 1, ne nw nw 24-19s-1w, Miss 2904 ft, abnd 2935 ft.

Stafford County—Failure: Rep. Nat. Gas Co.'s Asher 1, nw nw ne 1-24s-13w, Arb 4008 ft, abnd 4038 ft.

Trego County—Oil Discovery: Harber & Lee Greenburg, Tr.'s Cotton 1, se sw ne 15-12s-21w, KC li 3962-78 ft, pump 50 bbls, td 3978 ft.

KENTUCKY WILDCAT

Harden County—Failure: Ohio's J. W. Gatton 1, 19-P-41, abnd 1313 ft.

NORTH LOUISIANA WILDCAT

Caddo Parish—Oil Discovery: Phillips' Moneyham 1, c ne nw 5-18n-16w, elev 296 ft, perf 20 shots 5855-60 ft, flow 80 bbls 42.5-gr, 9/64-in, td 6512 ft.

SOUTH LOUISIANA WILDCATS

Rapides Parish—Failure: Louisiana Ld. & Exploration Co.'s Bentley Trust et al 2, 3083 s 2420 w of nec 25-5n-5w, on 40-ac unit, abnd 5900 ft.

St. Landry Parish—Failure: Southerwestern O&R Co.'s Sam Haas Est. 1, start sec sect 32 go n 1788 330 w in 32-6s-3e, Disc 6756-84 ft, Het 6790 ft, Cibicides 7920 ft, abnd 10,710 ft.

SOUTH LOUISIANA NEW PAY TEST

Jeff Davis Parish—W. Tepetate Discovery: Barnsdall's Jos. Fuselier 3, 4164 n 14° 15 mins e fr swc sect 38 330 at ra ely fr wl of sect 38 and 1416.6 fr well 2 on same lse in 38-7s-3w, n offset to Miller 1 discovery, perf 9272-76 ft in Frio, flow 97.56 bbls 52.46 oil, ⅛-in, gor 1326/1, td 9312 ft.

MICHIGAN WILDCATS

Bay County—Failure: Rayburn and Roush's Breu 1, sw nw se 25-17n-4e, Dundee 2794 ft, abnd 3018 ft.

Mecosta County—Failure: Chapman Oil Co.'s Burns 1, n½ se sw 5-15n-9w, abnd 1320 ft.

Kent County—Failure: Fisher-McCall's Barrett 1, se se ne 23-10n-12w, abnd 2830 ft.

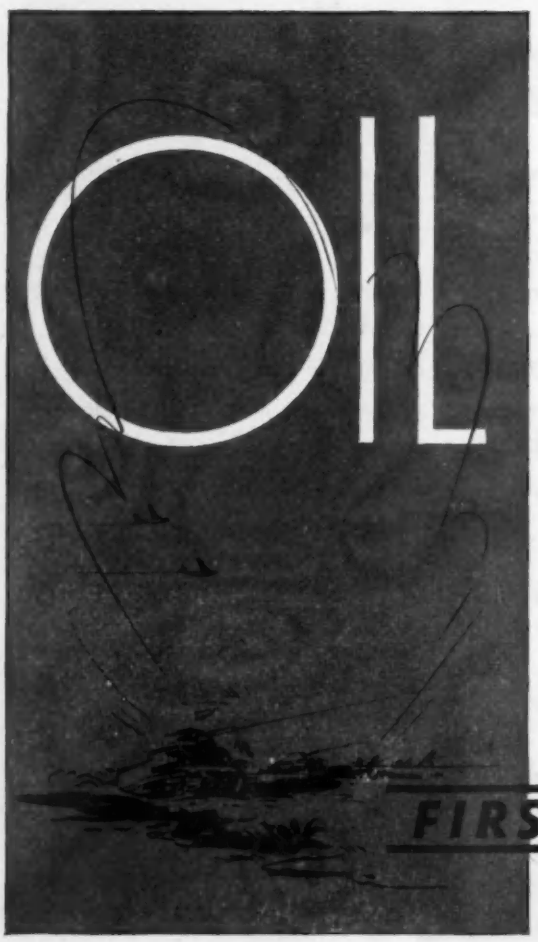
Osceola County—Failure: Sun's State B-1, s½ nw ne 10-18n-9w, Dundee 3952 ft, abnd 4067 ft.

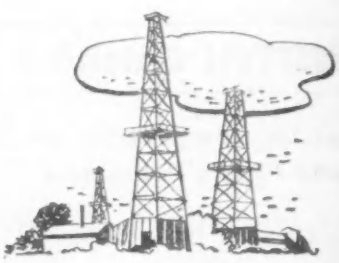
Tuscola County—Failure: Wicklund Development Co.'s Comment 1, nw sw se 3-14n-10e, abnd 3660 ft.

MISSISSIPPI WILDCATS

Jasper County—Gas-Condensate Discovery: Gulf's Edwards-Bailey 1, c nw se 27-10n-13w, elev 281 ft, 60 perfs 6590-6600 ft, flow 65 bbls 67-gr cond, 3/16-in, 2,083,656 gas, gor 32,170/1, Vicksburg 493, Yazoo 552, Moody's branch 786, Cockfield 809, Cook's Mountain 1035, Camerina 1082, Sparta 1172, Zilphia 1521, Winona 1689, Wilcox 1918, Midway 4467, Chalk 5020, Eutaw 6232, 1st sand 6240-47, Stanley 6391, Xmas 6590, Tuscaloosa 6696, M. Tuscaloosa 7490, Massive 7860, td 8151 ft.

Marion County—Gas-Condensate Discovery: Humble's Evans 1, c nw ne 15-2n-18w, elev 130 ft, 24 perfs 9127-29 ft, flow 72 bbls dark colored 52-gr cond, 5/32-in, gor 14,750/1,





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Oil man now in Armed Forces has developed a hydraulic device for slush pump valve seat removal. Drawings and working model look good. Want to contact manufacturer interested perfection, manufacture, sale to oil industry. Address: Box 7, c/o The Oil Weekly, Houston, Texas.

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■ ALABAMA—New township and section map of Butler County, Alabama, showing major company leases. Hand colored. Send $1.00 now for your copy. W. H. Vernor, 601½ E. Commerce St., Greenville, Alabama. (Phone 444).

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■ Wanted Pipe Line Construction Inspectors. Rush application airmail giving complete past employment record and at least six references with complete names and addresses. State salary expected. Apartado 1005, Monterrey, N. L. Mexico.

■ GEOPHYSICAL SUPERVISOR wanted by major oil company operating in Mid-Continent and Gulf Coast, to assist in supervision of geophysical contract crews and interpretation of field data. Permanent location in Houston, Texas. Must have considerable experience as seismic party chief. Geological training desirable but not required.

State in first letter age, salary expected, draft status, date available, furnish education and experience record. War Manpower Commission compliance required. Address: Box 12, c/o The Oil Weekly, Houston, Texas.

MECHANICAL ENGINEER

Nationally known oil field equipment manufacturer will employ qualified mechanical engineer, familiar with well completions, to assist in the design of production equipment. Permanent with excellent future to the right man. Locality, Houston. Replies strictly confidential. Address: Box 10, c/o The Oil Weekly, Houston, Texas.

Vicksburg 1886, Yazoo 1982, Moody's Branch 2180, Cockfield 2204, Cook's Mountain 2328, Wilcox 3103, Midway 5950, Clayton 6786, Selma 6816, Eutaw 7890, M. Tuscaloosa 8590, Massive sand 9236, td 9554 ft.

Tallahatchie County—Failure: Herbert M. Ogg & H. A. Clark's Dr. D. G. Bardwell 1, se nwc 5-25n-3e, elev 130 ft, Selma 2205, Eutaw 2608, Tuscaloosa 3205, abnd 3650 ft.

MISSISSIPPI OUTPOST

Lamar County—Baxterville 1½ Mi SE Extension: Superior's R. Batson 1, nw ne sw 17-1n-16w, elev 253 ft, dual comp: 79 perfs 7796-7810 ft, 2,952,000 gas, 10 bbls 48.4-gr cond, 316-in, gor 295,000/1, flow 582 bbls pipeline 16-gr oil, ¼-in, gor 113/1, fr Massive topped at 8770 ft, chalk 6566, base chalk 7478, td 8844 ft.

NEW MEXICO WILDCAT

Union County—Failure: Herndon Dr. Co.-Branine & Goering's Mack 1, nw nw nw 25-27n-36e, base Blaine 2100 ft, abnd 4555 ft.

OKLAHOMA WILDCATS

Beckham County—Failure: Sinclair Prairie's Perkins 1, c se nw 11-9n-24w, abnd 7685 ft.

Canadian County—Failure: Amerada et al's Lawson 1, ne se nw 18-11n-5w, Syl 8812 ft, abnd 9549 ft.

Garfield County — Oil Discovery: Con-Tex Pet. Corp.'s Wolf 1, ne sw sw 34-24n-3w, Wx sd 4833-47 ft, flow 1008 bbls hr, td 4837 ft.

Garvin County — Failures: Geo. L. Pace's Marrow 1, nw nw ne 33-1n-1w, abnd 3003 ft.

C. W. Roodhouse's Hines 1, ne se se 35-4n-1e, Brom sd 3710 ft, abnd 3885 ft.

McClain County—Failure: Carter's Johnson 1, c sw ne 20-8n-2w, Brom dense 8123 ft, abnd 8267 ft.

Okfuskee County—Failure: Mid-Co. Oil Co.'s Gee 1, ne ne ne 1-12n-8e, Mayes 3860 ft, Hunt 4155 ft, Vl 4290 ft, 1st Wx 4332 ft, 2nd Wx 4340 ft, abnd 4349 ft.

Seminole County—Failure: E. N. Jordan's Collins 1, se sw nw 6-5n-6e, abnd 2330 ft.

Sequoyah County — Failure: Ark-Okla Gas Co.'s Hash 1, e½ ne 32-12n-24e, Lans 2120 ft, abnd 2154 ft.

Stephens County — Gas Discovery: Carter's Frensley 1, ne ne 12-1n-6w, Perm perf 47 shots 913-25 ft, flow 2,800,000 gas, td 6785 ft.

Washita County — Failure: California Co.'s Reeder 1, ne nw 31-8n-17w, abnd 11,130 ft.

WEST TEXAS WILDCATS

Andrews County—Oil Discovery: Stanolind's University 1-D, 2051 ft ewl 660 ft nsl sect 8, blk 11, elev 3327 ft, 3½ mi w of West Andrews fld, anhydrite 1550 ft, Yates 2840 ft, San Andres 4320 ft, Glorietta 5450 ft, Tubb 6250 ft, Fullerton 6610 ft, Devonian 7965 ft, Silurian 8820 ft, Montoya 9030 ft, Simpson 9290 ft, McKee sand 9535 ft, Joines 10,039 ft, Ellenburger 10,057 ft, flow 289 bbls 41-gr oil, 4 bbls wtr, ¼-in, gor 732/1, 16,000 gals acid via Devonian perf 8300-50 ft, td 10,466 ft, pb 8400 ft.

Kent County—Failure: Blackwell O&G Co.'s House 1, 1335 ft snl 1408 ft ewl PSL Sec 8,

SITUATIONS WANTED

■ Employment Wanted—by man with twenty years experience as engineer for Major Oil Company in all phases of management, drilling and producing of crude oil. Reference letters from company if desired. Write: 123 Sidney Street, Longview, Texas.

■ LAWYER—Experienced in Title Work and Leasing would like position with company as Legal Investigator, "Trouble Shooter" or anything in Legal or Land Departments. Address: Box 14, c/o The Oil Weekly, Houston, Texas.

■ Man with thirty years experience in the land and producing sections of the oil business as individual producer and part of this time as vice-president and executive of a Major Independent Oil Company wants connection with independent interests or financing to carry on developments and other work in connection with producing business. Address: Box 11, c/o The Oil Weekly, Houston, Texas.

LEASES, DRILLING ACREAGE, ETC.

■ So. Georgia shallow sand leases for sale. Blocks 1—5—10—15—20—25 thousand acres. Owners: Box 364, Waycross, Georgia.

ADVERTISING RATES

TRADING POST SECTION

Regular classified advertisements for this special section, set in type this size without border, take flat-rate of 7 cents per word for the first insertion and 5 cents per word for each subsequent insertion of same copy. Display advertisements for this section, set in suitably larger type with ruled border, are $5.00 per inch for the first insertion and $4.00 per inch for subsequent insertions. Remittance must accompany copy which should be sent to:

Trading Post Section, The Oil Weekly
P. O. Box 2608 **Houston 1, Texas**

blk B, elev 2316 ft, solid li 1390 ft. San Angelo 2310 ft, Coleman Junction 4500 ft, Pennsylvanian 5840 ft, abnd 7775 ft.

Ward County — Failure: Cities Service's Thornton 1, c n¼ of n¼ H&TC Ry. 80, blk 34, elev 2604 ft, abnd 2943 ft.

WEST CENTRAL TEXAS WILDCATS

Jones County—Failures: Anderson-Prichard Oil Corp.'s Parkinson-Standard of Texas 1, 1800 ft ewl 8900 ft snl of M. Fragosa sur 209, elev 1803 ft, top Dothan 2300 ft, abnd 3755 ft.

Dale H. Rowden & R. Thomas McDermott's McCaleb 1, 990 ft snl 480 ft ewl sec 5, MEP&P Ry. sur, elev 1746 ft, abnd 2695 ft.

SOUTHWEST TEXAS WILDCATS

Duval County—Gormac Oil Discovery: J. W. Gorman & McDermott's J. F. Welder 2, 330 fr w&sl of sect 211 2600 sw of No. 1, 455.89-ac lse, J. Poitevent sur, 6 mi ne of Freer, elev 526 ft df, perf 40 shots 2470-80 ft, flow 107 bbls 24-gr, ¼-in, gor 200/1, td 2512 ft.

Duval County — Failures: Argo Oil Corp.'s Carrillo Heirs 1, 330 fr sw&nwl 360-ac lse, 2400 fr sel 1470 fr swl AB&M sur 183, 10 mi n of Benevides, abnd 4950 ft.

Butcher-Arthur-Taylor Ref. Co.'s C. M. Robinson 1-A, 330 fr s&wl 320-ac lse, AB&M sur 408, 6 mi nw of San Diego, abnd 5125 ft.

M. E. Davis' Atlee Parr 3, 5000 n 1000 e of sw interior cor of 7139-ac lse, San Andres Garcia Gr blk 66, 7100 sw of No. 1, abnd 7532 ft.

LOWER TEXAS COAST WILDCATS

Bee County — Failure: Humble's Josephine Chestnutt 1, 5622 fr swl 850 fr nwl 1000-ac lse, Miguel de los Santos Gr, abnd 5610 ft.

Brooks County—Oil Discovery: Texas Co.'s McGill Bros. 1, 466 fr w&sl 7110-ac lse, J. A. & A. M. Garcia sur, elev 230 ft, sand 6444 ft, perf 18 shots 6114-17 ft, flow 276 bbls 40.1-gr, 5/32-in, gor 857/1, td 6795 ft.

Hidalgo County — Failures: Kingwood Oil Co.'s John H. Shary 1, 660 fr nl 560 fr wl of and in c of lot 11 (se¼ sw½ of blk 27) 4800-ac lse, San Salvador del Tule Gr, abnd 8107 ft.

Texas Co.'s Argyle A. McAllen et al 2, 11,040 fr wl 11,875 fr nl 35,996-ac lse, Santa Anita sur, 28,141 n of No. 1 on same lse, abnd 10,400 ft.

Jim Wells County — Failure: La Gloria Corp.'s Geo. W. Reynolds 1, 300 fr nl sur 141 1750 nw at ra fr sel of Reynolds 2945-ac tr, I&GN sur 141, 4 mi w of Orange, abnd 5525 ft.

Nueces County—Failure: C. Andrade's Rand Morgan 1, 660 fr sl 330 fr el sect 411 blk 33 660 fr el 90-ac lse, elev 50 ft, abnd 7511 ft.

Refugio County—Failure: Hewit & Dougherty's K. D. Roche 2, 467 fr wl 1475.8 fr nl of blk 59, 200-ac lse, Thos. O'Connor sur, abnd 6800 ft.

UPPER TEXAS COAST WILDCATS

Fayette County—Oil Discovery: Continental's E. A. Arnim, Jr., et al 1, 330 n of nl Continental Wm. Dilton lse 330 w of wl Continental's A. Derry lse 330 fr s&el 30-ac tr in 372.16-ac lse, J. S. Menefee ⅛ Lge, sand 2040 ft, perf 35 shots 2050-59 ft, pump 80.52 bbls 20-gr oil, 0.1% wtr, td 5405 ft, pb 2120 ft.

San Jacinto County—Oil Discovery: Navarro Oil Co.'s Foster Lbr. Co. 1, 1170 n of nl of Amerada's 40-ac J. J. West lse 933 sw of swl of Polk Co. Sch. Ld. sur, on 1006-ac lse in Geo. Taylor sur, elev 322 ft df, Wilcox sd 7883 ft, perf 7906-10 ft, flow 74.58 bbls 38.5-gr, 3/16-in, gor 12,500/1, td 7960 ft.

UPPER TEXAS COAST OUTPOST

Liberty County — S. Esperson Extension: General Crude Oil Co.'s Sun Oil Co. 17-B (1-C), 800 fr wl 103.35-ac lse, F. M. Gardner sur 800 e of el of Duncan sur, 2000 e ne of Welch-Fee 10 at Kirby fld, 2400 w and s extension of Esperson 15-B at Esperson, sand 5940 ft, perf 30 shots 5940-45 ft, perf 90 shots 5955-70 ft, perf 60 shots 5975-85 ft, flow 135.13 bbls 37.1-gr oil, 0.4% wtr, ⅛-in, gor 779/1, td 6174 ft.

EAST TEXAS WILDCATS

Henderson County—Failure: Gulf's Frizzell 1, 1050 ft nsl 2150 ft ewl of David Cherry sur A-135, elev 459 ft, Nacatoch 2030 ft, Pecan 2618 ft, Austin 3638-3993 ft, Sub-Clarksville 4053 ft, Woodbine 4310 ft, Comanche shale 5200 ft, lime 5253 ft, Ft. Worth 6030 ft, Duck Creek 6374 ft, Goodland 6652 ft, Paluxy 6890 ft, Glen Rose 7320 ft, Massive anhydrite 10,815-11,385 ft, anhydrite stringer 11,435 ft, abnd 11,687 ft.

Houston County—Failure: F. K. Lytle et al's Watson 1, 761 ft wel 2550 ft nsl R. de los Santos Coy sur, elev 313 ft, Wilcox 2415 ft, Midway 5855 ft, abnd 6007 ft.

NORTH TEXAS WILDCATS

Clay County—Failure: J. C. Jennings et al's Kempner 1, 330 ft out of sec blk 17, Bosque CSL sur, elev 968 ft, Bend 5695 ft, Mississippi 6170 ft, Simpson 6425 ft, abnd 6641 ft.

Cooke County — Failure: Seitz-Comegys & Seitz's Parker 1, 660 ft n 360 ft w of nec of T. P. Henry sur A-574, but in S. E. Clements sur A-290, elev 769 ft, Winger sd 5332 ft, Simpson sh 5525 ft, abnd 6005 ft.

Throckmorton County—Failure: A. B. Bissey et al's Robinson 1, 2400 ft snl 2400 ft ewl sec 224, BBB&C Ry sur, abnd 777 ft.

NORTH TEXAS NEW PAY TEST

Wilbarger County—Harrold Deep Discovery: Big Six Oil Co.'s Schlaffke & Morris 1-A, 760 ft nsl 737 ft wel H&TC Ry. 2, blk 14, offset 2900-, 3100-, 3200-ft pays, Ellenburger 4946 ft, pump 63 bbls 45-gr oil, acidized 1500 gals through perf 4830-48 ft, td 5146 ft.

EAST TEXAS BORDER COUNTIES WILDCATS

Harrison County—Failure: Gregg-Tex Gas. Corp.-Hanlon Gas. Corp.'s T. B. Page 1, 1250 e of wl 2200 s of nl H. R. White sur 162-ac tr, elev 400 ft, Pettit 7345 ft, abnd 7502 ft.

Shelby County — Failure: Southport Pet. Co.'s R. C. Poore 1, 660 e of wl 536 n of sl 65-ac tr, blk 10 Holmes Byfield sur, Commanche li 3072 ft, td 6912 ft, pb 6647 ft, dr out to td 6421 ft.

WESTERN CANADA WILDCATS

Southern Alberta Plains — Foremost: California-Standard's Foremost-Province 2, lsd 4 25-6-12w4th, abnd 4281 ft.

Conrad: California-Standard's Conrad-Province 75-32B, lsd 12 32-5-15w4th, Ellis sd tight, oil show not commercial, abnd 3279 ft.

United States Wildcat Starts

ARKANSAS

Drew County A. E. McKeirnan et al's T. C. Deal 1, s nw se 29-11-7, lcn.

Newton County: William S. King's O. F. Moten 1, 330 s and w nwc ne sw 25-17n-19, lcn.

White County: Lion Oil Ref. Co.'s Nalley 1, se ne 33-8n-7w, lcn.

FLORIDA

Charlotte County: Humble's Lownes-Treadwell 1, c sw ne 17-42s-23e, lcn.

ILLINOIS

White County: Pittsburgh Const. Co. et al's Land 1, nw nw se 25-5s-9e, lcn.

INDIANA

Crawford County: Texas Co.'s Wabash Land & Coal Co. 1, ne nw sw 28-7n-10w, lcn.

Posey County: Texas Co.'s H. J. Schmidt 1, ne se nw 5-5s-13w, lcn.

KANSAS

Barton County: Inland Oil Co.'s Poppelraiter 1, nwc ne 18-18s-10w, lcn.

Ellis County: Stearns Drlg. Co. et al's Madsen 1, se nw 1-12s-16w, mim.

Leavenworth County: E. J. Kelly et al's Krohne 1, c sw sw 31-9s-23e, dr 178 ft.

Stafford County: Sohio's Rader 1, nw ne sw 18-21s-11w, lcn.

KENTUCKY

Crittenden County: Jewell Resnick's Garrett 1, 8-L-19, lcn.

Henderson County: Kingwood Oil Co.'s Cosby 1, 6-O-26, lcn.

NORTH LOUISIANA

Desoto Parish: H. C. Owens' L. C. Dixon 1, 2349 w 480 s nec 23-14n-13w, Tokio test.

La Salle Parish: Placid Oil Co.'s Tremont Lbr. Co. F-3, 660 s 660 w of nec, 9-9-9e.

H. L. Hunt Co.'s Nebo Oil Co. F-128, 3300 w 660 n sec 36-8-3e.

E. C. Laster's J. H. Baker 1, lcn changed to c nw nw 4-16-9e.

Natchitoches Parish: Ben H. Morgan's B. T. Locke et al 1, 660 fr sl 330 fr el of se ne 33-10n-10w.

Richland Parish: George Schoonmaker et al's Gold Mine 1, 330 n of swc 10-14n-6e, 4500-ft test.

SOUTH LOUISIANA

Beauregard Parish: Amerada's Lutcher-Moore Lbr. Co. 1, 1975 s 663 e of nwc 23-6n-8w, NE Fields area, 8500-ft test.

Cameron Parish: Magnolia's Lutcher 1-A, 2300 n 2000 e of swc 32-14s-11w, Mud Lake area, Hackberry test.

MICHIGAN

Allegan County: Harris Oil Co.'s Freeman 1, sw se nw 30-4n-13w, dr.

Louis Zellman's Shields 1, sw nw sw 36-4n-13w, lcn.

Clinton County: Union Dr. & Prod. Co.'s Piggot 1, se se sw 30-8n-3w, dr.

Huron County: C. W. Teater's Polega 1, se ne se 27-18n-13e, rig.

Midland County: Rowmor Corp.'s Joynt 1, ne ne ne 36-16n-1e, dr.

Montcalm County: Perry and Gould's Sessions 1, e½ se nw 17-9n-5w, rig.

Van Buren County: Fox Oil Co.'s Ralph 1, nw ne ne 34-1s-13w, lcn.

MISSISSIPPI

Tallahatchie County: Ogg & Clark's G. Burkhalter 1, 1650 n 1980 e 27-26n-3e, prep to spud.

OKLAHOMA

Cleveland County: Magnolia's Lexington 1-A, ne ne sw 20-6n-1w, lcn.

Ed Kubat's Steel 1, nw nw se 2-6n-1e, lcn.

Lincoln County: Alladin Pet. Co.'s Young 1, nw sw nw 32-12n-3e, lcn.

Logan County: Texas Co.'s Arundel 1, se ne sw 2-15n-1w, lcn.

Texas Co.'s Hoge 1, se se nw 8-16n-3w, lcn.

Oklahoma County: Vickers Pet. Co.'s Varnum 1, se sw sw 25-14n-1w, lcn.

WEST TEXAS

Hockley County: Texas Co.'s W. T. Coble 1, 580 ft out nec Labor 20, Lge 67, Hardeman CSL sur, 2¼ mi w of Montgomery discovery, dr 1066 ft on 5000-ft test.

Terry County: Woodley Pet. Co.'s Whitt Gunn-Stanolind 1, c sw sw PSL 7, blk C-39, lcn 5250-ft test.

WEST CENTRAL TEXAS

Callahan County: O. B. Holmes et al's I. N. Jackson 1, 150 ft snl 1800 ft wel T&NO Ry. sec 1, elev 1851 ft, lcn 800-ft cable test.

SOUTH CENTRAL TEXAS

Guadalupe County: R. V. Muckelroy's Tom H. Baker 1, 330 fr nwl 990 fr nel 122-ac lse, Samuel Highsmith sur, 3 mi w of Luling, elev 510 ft, 3000-ft test.

Williamson County: V. E. Nicholson's Theo Schwenke 1, 330 fr n&el 105.6-ac lse, Joseph Jorden sur, ½ mi s of Coupland, 1200-ft core test.

SOUTHWEST TEXAS

Starr County: Coastal Refineries-Henshaw Bros.' Yndalecio Sanchez 1, 1320 e of m/wly/wl 2448 n of m/sly/sl sur 544 640-ac lse, elev 370.5 ft, 5000-ft test.

Webb County: Dulup Oil Co.'s Bruni 9, 1320 fr el 660 fr nl blk 74 330 s of well No. 7, 640-ac lse, Albercas Gr, Brown subdvn, 2000-ft test.

LOWER TEXAS COAST

Brooks County: Sun's Mary M. Lasater 2, 583 fr nl 665 fr m/ely/wl HE&WT sur 349 1339 sw of ne interior cor of 1760-ac lse, 990 w of well No. 1, 6000-ft test.

Jackson County: Renwar Oil Corp.'s L. R. Hollingsworth 1, 467 fr s&el of w½ of blk 20, 1485-ac lse, Eli Mercer Gr A-54, 10 mi n of Edna, 5000-ft test.

San Patricio County: H. H. Howell's Paul A. Allen 1, 467 fr nel 1400 fr sel 279-ac lse, Mathis Rch. subdvn sect 6, 5200-ft test.

UPPER TEXAS COAST

Brazoria County: Humble's Bassett Blakely et al 7, 660 fr nel 1320 fr sel L. B. Ehrman sur 22, N. flk Danbury Dome, 7342.1-ac lse, 12,000-ft test.

Hardin County: American Republics-Houston Oil Co. of Texas' Maggie Maxwell 1, 1977 fr nl 525 fr wl 713 fr el Singleton sur 40-ac lse, elec 77.5 ft, 8000-ft test.

Pan American Prod. Co.'s Olive Sternenberg Lbr. Co. 1, 1882 fr wl 50 fr nl P. S. Watts sur at c 40-ac unit of 4000-ac lse, 18,500 nw of W. Silsbee fld, 12,000-ft test.

Harris County: Josey-Bruton's David Rorick, Jr. 1, 660 fr s&el se sw sect 31 H&TC sur, 640-ac, 6 mi ne Katy, 7500-ft test.

Wharton County: George Crooke's Hawes Est. 1, 400 fr nel 550 fr sel 155-ac lse, Stephen F. Austin sur 3-1/6 Lge, 600-ft test.

NORTH TEXAS

Archer County: Benson Bros. et al's J. Forester 1, 930 ft ewl 1489 ft nsl blk 74, Harris subdvn, 2000-ft rotary test.

Republic Natural Gas Co.'s C. Wells 1, 150 ft nsl 150 ft fr m/e/wl of W. Hassell Sur A-755, 1500-ft rotary test.

Cottle County: S. D. Johnson et al's J. E. Moss 1, 1170 ft snl 1787 ft ewl sect 5, A. Forsythe sur A-658, blk L, sp 5200-ft test.

Mid-Continent's Tom L. Burnett 1, c nw se sec 9, blk L, SP Ry. sur, 6000-ft test.

Haskell County: Hunter-Hunter et al's M. J. Wood 2, 2278 ft ewl 4822 ft snl sect 46, L. Dychess sur A-118, 3400-ft Palo Pinto test.

Throckmorton County: Guinn & Myers' M. Davis 1, 150 ft nsl 1800 ft wel C. W. Marquess sur A-236, 800-ft cable test.

EAST TEXAS BORDER COUNTIES

Panola County: H. Mitchell's Temple Lumber Co. 1, 3600 fr nwl 1560 fr swl Mary Strickland sur A-597, 3½ mi e of Dotson, 6500-ft test.

WESTERN CANADA

South Alberta Plains — Tempest: Imperial Oil's Imperial-Tempest 2, sw lsd 3 24-9-19w4th, lcn.

Stirling: Imperial Oil's Imperial-Stirling 1, nw lsd 4 15-7-19w4th, lcn.

Squeaks from the Bull Wheel

Poet's Nook

There was a young fellow from France,
Who waited ten years for the chance
—And muffed it!

Hints for Huggers

"You young scalawag! I'll teach you to make love to my daughter."

"I wish you would. I'm not making much headway."

It Shall Not Pass

"Halt! Who goes there?"

"Friend, with bottle."

"Pass, friend. Halt, bottle!"

Bless You, My Boy

"I hear you advertised for a wife. Any replies?"

"Sure. Hundreds."

"What did they say?"

"They all said: 'You can have mine'."

The Better Life

An old Negro was asked for the secret of her long life and placid disposition. Said she: "When ah walks, ah walks slow; when ah sets, ah sets loose; and when ah worries, ah sleeps."

Lady Chesterfield once said to her daughter: "My child, anything that is worth doing is worth doing well. If you decide to let a young man kiss you, respond enthusiastically. Nobody likes to kiss a rock."

Not Present But Accounted For

"Where is Private Smith?"

"A. W. O. L."

"Meaning what?"

"After women or liquor."

Divided Task

"This girl is fresh from the country and it's up to us to show her the difference between right and wrong."

"Okay, you show her what's right."

Something New Under the Sun

The council was discussing the type of milk which should be provided school children. To conclude the debate, the chairman rose to his feet. "Gentlemen," he declared, "what this town needs is a supply of clean, fresh milk, and the council should take the bull by the horns and demand it."

This Curious World

Women are fools to marry—but who else can a man marry?

Too many people itch for what they want, but won't scratch for it.

Some women buy dresses for a ridiculous price, while others buy for an absurd figure.

Marriage is something no family should be without—even if it is the greatest cause of divorce.

When a woman's toe sticks out of her shoe, she's fashionable. When a man's toe sticks out, he's a bum.

Some women believe that the best way to get all mussed up is to go out with a crude oil salesman.

Advice is what a man gives when he gets too old to set a bad example.

He Deserved It

A motorist on a muddy road drew alongside a fellow traveler who was digging in the slush beneath his car.

"Stuck in the mud?"

"Certainly not, my friend. My engine died here and I'm digging a grave to bury it."

No Apologies

"Sorry, Soldier, but I never go out with perfect strangers."

"That's okay, Babe. I ain't perfect."

Correction

Said a lawyer to a Negro who had been struck by a bus: "Come with me; you can get damages for this."

Said she: "Good lawd, man! Ah don't need no mo' damages. What ah needs is repairs!"

The City Slicker

"What kind of oil do you use in your car?"

"Oh, I usually begin by telling them how lonely I am."

If She Could

Coed: "I went riding with a stranger. Did I do wrong?"

Dean: "If my years of experience count, the answer is—probably."

Could Be Serious

"I hear the officers are trying to stop necking near the WAVE barracks."

"The heck you say! First thing you know they'll be trying to make the enlisted men stop, too."

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TULSA

Men in the Industry's News

DR. H. D. WILDE has been named manager of research and development for Humble Oil & Refining Company, Houston. He has been manager of the Technical and Research Division of the Refining Department since 1933.

Dr. H. D. Wilde

Dr. Wilde will supervise and coordinate the work of three groups serving the principal departments of the company: the Technical and Research Division of the Refining Department which carries on technical service, control testing, research and development work at the refineries; the Geophysics Research Division of the Geologic, Land and Lease Department which carries on research and development work connected with geophysics exploration, including the search for new methods of exploration; and the Production Research Division of the Production Department which conducts research and development work in two major fields, geochemical exploration which involves the search for and discovery of oil deposits by chemical analysis, and production which covers well spacing, rate of production, oil and gas ratio, water encroachment, mud logging, etc.

He has been with the company since July, 1927.

H. H. Meier has been made manager of the Technical and Research Division of the Refining Department, and W. F. White has been made assistant manager. Dr. W. M. Rust, Jr., will continue in direct charge of geophysical research and will report to Dr. Wilde through D. P. Carlton. Stuart E. Buckley will continue in direct charge of production and geochemical research, and Dr. L. W. Blau will continue to serve in a consulting capacity on production research and geophysical and geochemical research.

MR. AND MRS. H. ROY CULLEN last week announced gifts of a million dollars each to four Houston hospitals. Cullen is a Houston independent oil man, formerly a vice president of IPAA, and has previously given large sums to Texas and Pennsylvania educational, cultural and charitable institutions.

M. V. C. BRADLEY has been named by Magnolia Petroleum Company to head its new Gulf Coast Production Division recently established in Houston with offices in the Niels Esperson Building. Bradley has been a member of the Magnolia organization since 1919. First stationed at Desdemona, Texas, he obtained experience throughout West and West Central Texas and Kansas. More recently he was district superintendent in southern Louisiana districts, and came to Houston from Bay City, Texas.

JAMES A. ANDERSON, who recently retired as vice president of Humble Oil & Refining Company, has been elected president of Houston Fire & Casualty Company, succeeding W. S. Sherman, known to the oil industry as president of the Magnolia Cotton Oil Company. Among other directors of Houston Fire & Casualty Company are R. Fairfax Crowe, vice president of Magnolia Cotton Oil Company and recently a director of Navarro Oil Company, and A. S. Peterson, independent oil man of New Orleans.

GLENN P. THOMPSON was recently named director of marketing for Petroleum administration for War, District 3. Thompson has served as assistant director in the district for nearly two years and was made director following the resignation of E. J. Dorgan. Prior to joining the marketing division, Thompson had been chief production analyst in the production division following his coming to the agency from the Railroad Commission of Texas where he had served for seven years, the last year of which he was acting director of production. He is a registered petroleum engineer, an alumnus of the University of Illinois, and his marketing and sales experience dates from 1926.

ROBERT E. RYERSON, formerly general sales manager and recently acting head of the Eastern Division Sales Department of Tide Water Associated Oil Company, has been appointed a vice president of the company.

R. E. Ryerson

Ryerson fills the position formerly held by J. D. Collins, who died on January 20.

Ryerson has had more than 18 years' service with the company in its eastern division sales department.

DR. ROBERT M. KLEINPELL, California geologist and micro-paleontologist and a member of AAPG, talked to the outside world through the medium of a recording received a few days after his liberation, February 23, from the Los Banos internment camp on Luzon Island. He was taken prisoner on December 29, 1941, while in the Philippines as geologist for National Development Company.

GEORGE H. HILL, JR., has been elected vice president of Petroleum Advisers, Inc., a management and technical unit coordinating the activities of Cities Service Oil Company's petroleum operating companies. Hill has been executive vice president and general counsel of Defense Supplies Corporation since 1942. For ten years previously he was successively attorney and counsel for RFC, general counsel for RFC Mortgage Company, and general counsel for DSC.

HORRY F. PRIOLEAU has been elected vice president of Creole Petroleum Corporation and becomes chief executive officer in New York. Arthur T. Proudfit was recently named president and continues as general manager with offices in Caracas.

Horry F. Prioleau

Prioleau, formerly a vice president and director, started in 1921 as a laboratory assistant in a Standard Oil Company of New Jersey refinery and in 1925 went to New York as assistant to the general manager. He has worked for various foreign operating units of the Jersey Standard group and was in The Hauge until forced out in 1940 by the German occupation.

L. H. TRUE, assistant general manager of Magnolia Pipe Line Company, Dallas, has been elected a member of the board of directors, according to D. A. Little, president. Guy L. Tate, secretary, was also elected a board member and treasurer, succeeding W. L. Holmes in the latter capacity.

HARVEY LEE, production superintendent for Magnolia Petroleum Company in the Longview district, East Texas, has been transferred to Jackson, Mississippi, where he will have charge of the company's operations in the newly created Jackson district. J. B. Wells, superintendent of the Rusk district, East Texas, with headquarters at Kilgore, will expand his activities to include the Longview district.

R. M. CHAN, director and assistant vice president of Magnolia Petroleum Company, Dallas, was elected a vice president March 13. E. C. Seymour, treasurer and comptroller, and S. A. Thompson, chief geologist and head of the geological, land and scouting departments, were placed on the board of directors. M. J. Norrell, industrial relations manager, was elected secretary, succeeding Guy L. Tate, who has been elected a director and secretary-treasurer of the Magnolia Pipe Line Company.

Deaths

WILLIAM H. McCALIP, assistant operating superintendent of gasoline plants for the United Pipeline Company, died in Shreveport, March 13. He had been employed by the United more than 25 years, working for a predecessor company in Homer in 1919. He is survived by his widow, Mrs. Lena McCalip, his father, John McCalip; five brothers and two sisters.

Notes for the Equipment Buyer and User

Protractor for Pipe and Steel

TRU-LINE CORPORATION

Tru-Line Corporation, 759 Venice Boulevard, Los Angeles 15, California, has announced a protractor which scribes pipe, structural shapes and flat sheet steel on any angle to one half of a degree.

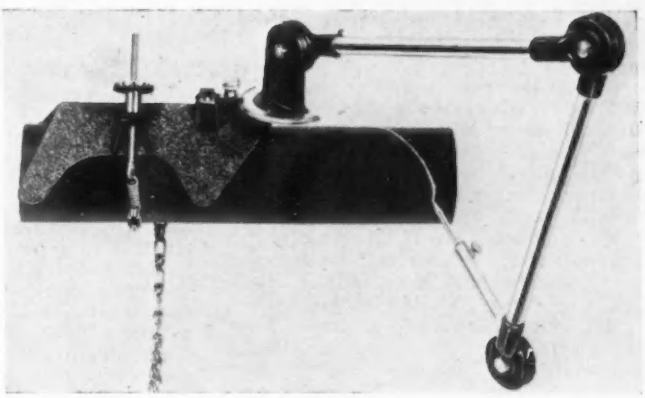
These protractors are made in two stock models, with three sizes. The model illustrated scribes the circumference of pipe from three to 18 inches in diameter.

In a few seconds it may be placed on the pipe parallel to the center line, leveled by means of a built-in spirit level, locked in place with a spring chain, adjusted to the desired angle by means of the 180-degree scale, and the scribing completed. The protractor is made of precision - machined, cast bronze alloy and steel tubing. The joints are large in diameter and contain special fibre bearings which hold the correct tension and maintain positive alignment. The marking arm is rigid throughout its travel.

Another model of this protractor marks pipe fom 12 to 36 inches in diameter.

The Junior protractor marks pipe or rod from one half to three inches in diameter. It is of sturdy, accurate die cast construction.

For use on flat surfaces, channel iron, T or I structural shapes, the protractor is set up as on pipe, or held square to any edge or corner. Plump bob indicator and spirit level show any degree of angle from a horizontal plane.



Tru-Line Protractor

Pipe Line Computer

WILLSONN COMPUTERS

Willsonn Computers, 925 Central Avenue Extension, Oil City, Pennsylvania, has a gas pipe line computer designed to eliminate pencil work in solving problems involving the difference of squares of absolute inlet and outlet pressures. The computer also incorporates much of the later research work relative to pipe line flow and thus permits solution of problems by either the Weymouth Formula or the General Pipe Line Flow Formula.

Problems which may be solved by use of the computer include: determination of rate of flow of gas, inlet or outlet pressures; size or length of pipe line to deliver a desired rate of gas; equivalent lengths and diameters of pipe of common capacity; capacity of a looped system; friction factor of an operating line (General formula only); efficiency and "experience" factor of an operating line.

The computer is 7½ inches in diameter and is constructed of substantial material.

Heavy-Duty Mowing Machine

ALLIS-CHALMERS MANUFACTURING COMPANY

Allis-Chalmers Manufacturing Company, Milwaukee, announces a heavy-duty, general purpose mower. Mounted as a unit on a Model "B" tractor, the mower has a variety of travel speeds for all conditions, and is said to possess unusual stability for operations on extreme slopes and difficult angles.

A 5-foot, heavy-duty cutter bar is within full view of the operator and is smoothly and easily raised and lowered by a power hydraulic lift. The inner

Moorlane Honored

The Moorlane Company, Tulsa, has been awarded the white star to be placed on the Army-Navy "E" flag in recognition of continued high production of war products. The company was awarded the Army-Navy "E" on September 8, 1944.

Moorlane has been devoting much of its capacity and facilities to the manufacture of parts for the portable pipe line used by military authorities on the front line to carry oils, gasolines and water.

Tivit Representative Named

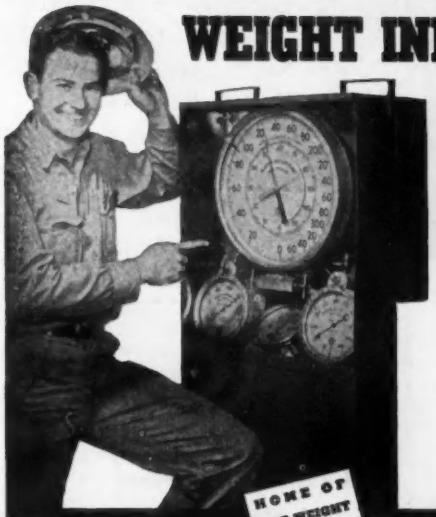
Tivit Products, Los Angeles, California, announces that M. P. Greffoz has been appointed service representative. He has experience in drilling, producing and warehouse operations with various oil companies. Tivit Products is successor to the Torrance Cleaner Company.

Iron Castings Handbook

The Malleable Founders' Society, Union Commerce Building, Cleveland 14, announces publication of the first handbook ever compiled on the subject of Malleable Iron Castings. Much of the contents of the book consist of definition and analysis of process and product, describing the industry in terms of metallurgy, chemistry, engineering and purpose by photograph, formulae, design drawing and plant and laboratory explanation.

Welding Catalog Issued

Victor Equipment Company, 844-54 Folsom Street, San Francisco, has published a gas welding and cutting apparatus catalog presenting a pictorial review of all gas welding and flame cutting equipment made by the company.



WEIGHT INDICATOR POINTS

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shoe is located outside the rear wheels and can be raised 12 inches by a conveniently-located hand lever. The sickle delivers a full cutting stroke through a wide range of positions from 45 degrees below horizontal to 60 above.

To insure protection for the sickle when obstructions are encountered, the belt drive slippage provides a safety relief and eliminates any possible damage. The mower design leaves the drawbar open enabling the tractor to pull gangmowers or other equipment without removing the cutter bar.

General Electric Officials Receive New Assignments

General Electric Company, Schenectady, New York, announced that ten vice presidents, long in charge of sales of heavy electrical apparatus, will be assigned to new duties in charge of customer relations for all units and subsidiaries.

Under the new set-up, the ten will become members of the president's staff and will direct all phases of the company's relations with its customers, including sales, but excluding operating activities within their respective territories.

Those affected are R. M. Alvord, San Francisco; T. F. Barton, New York; W. O. Batchelder, Chicago; L. T. Blaisdell, Cleveland; W. B. Clayton, Dallas; E. H. Ginn, Atlanta; A. L. Jones, Denver; T. S. Knight, Boston; A. S. Moody, Portland; and C. K. West, Philadelphia.

They will report to E. O. Shreve, vice president in charge of customer relations, with headquarters in New York City. Each will retain his title of commercial vice president, as well as his present location.

District managers of apparatus sales have been named to take over the duties formerly handled by the vice presidents. They are C. E. H. Palmer of the New England district, Boston; W. J. Dorworth, for Atlantic district, Philadelphia; C. L. Redd, for Southeastern district, Atlanta; C. W. Fick, for East Central district, Cleveland; R. I. Parker for Central district, Chicago; H. W. White, for Southwestern district, Dallas; F. H. Doremus, for Rocky Mountain district, Denver; A. G. Jones, for Pacific district, San Francisco; and J. R. Murphy, for Northwestern district, Portland.

Guides for Lubrication of Airplanes are Available

Standard Oil Company of New Jersey, 26 Broadway, Room 1610, New York, in conjunction with lubrication engineers of the Chek-Chart Corporation, has completed a series of lubrication guides for the care and maintenance of airplanes, particularly civilian aircraft.

The charts consist of 39 color diagrams, covering 25 makes of planes, and 57 models of planes.

Every lubrication point in the plane to be covered is indicated in each of the charts, and a simple index system gives authoritatively the lubricant to be used and how often.

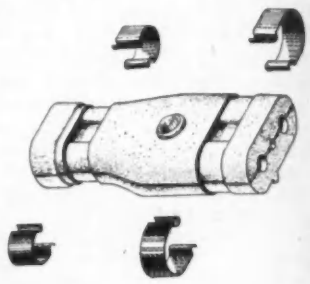
Seeks Utah Steel Plant

United States Steel Corporation has advised the government that it is interested in discussing a possible basis of purchase or lease of the government-owned steel plant at Geneva, Utah, for postwar operation.

Heavy Duty Battery Plug

CANNON ELECTRIC COMPANY

Cannon Electric Development Company, 3209 Humboldt Street, Los Angeles 31, has perfected Type GB-3-21-CFS battery plug for heavy-duty service. The plug is equipped with a switching device and has two 600-amp contacts, and is recommended especially for engine starting operations from mobile service truck power in oilfield installations. It is adaptable to many other applications, however, where engine starting requires 600-ampere circuits.



The plug has a streamlined design and uses spring clips on its phenolic shell. This type of construction is said to add a distinct advantage in servicing the plug, either to replace contacts or for cleaning, without altering cable connections. The push button feature makes it possible to switch on power whenever the operator wishes, eliminating arcing when plugging in or out.

Overall length is seven inches and the width at the engaging end is 2 5/16 inches. Shell material is special molded phenolic of high impact qualities for rugged use. The contacts are leaded copper with phosphor bronze spring. Terminals are adaptable for soldering or crimping. The low amperage switching contact is brass, silver plated. Wire accommodations are No. 8 and No. 4-0 stranded.

Eagle-Picher Firm Buys Southern Lead Company

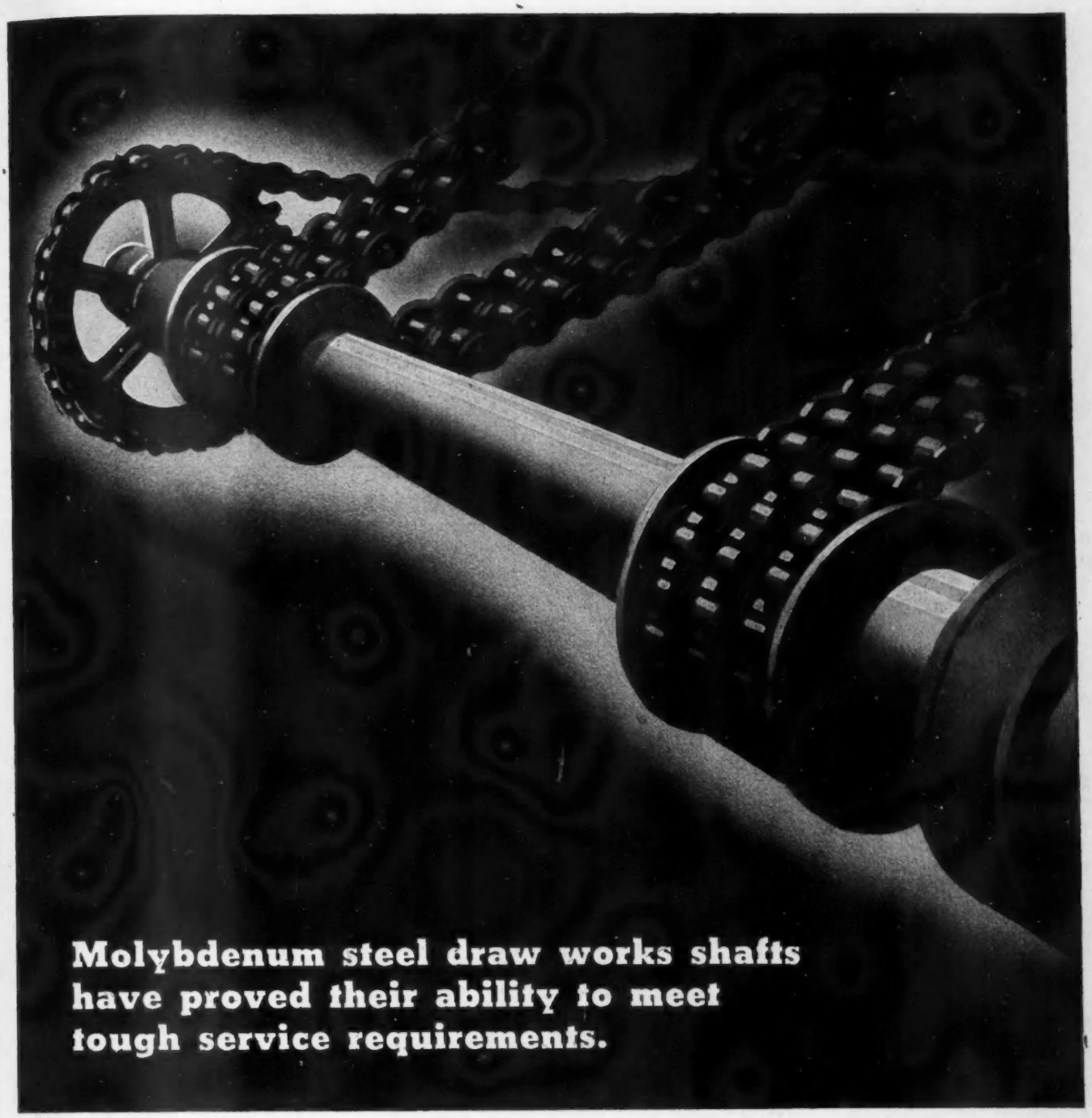
Eagle-Picher Lead Company, Cincinnati, Ohio, announces purchase of production and distribution facilities of Southern Lead Company, Dallas, effective March 1.

J. V. Murph

Products of the newly acquired Dallas plant will be sold under the Eagle-Picher name, but the personnel of Southern Lead Company will be retained under terms of the agreement.

J. V. Murph will serve as general manager of the Dallas plant. D. Bentley Murph will be in charge of production and D. H. Murph, founder, will remain in a consulting capacity. Operations will be conducted under the newly-created firm name, Eagle-Picher Company of Texas, with the Murphs serving as vice presidents.

To the present fabricating equipment will be added pipe and solder presses, extrusion machinery to make traps and bends, roof flanges and lead wool, and new die casting equipment.



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Orbit Gear Operated Master Valve

This valve can be furnished thru all fabricators of Xmas Trees or thru any of your local supply stores at a price comparable to that of other leading valves. The Orbit Valve requires no lubrication to effect a seal.

See 1944 Composite Catalog Pages 2193 to 2212

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R. G. "Bob" Cole, Houston, Texas
Phone Fairfax 0057
Warehouse 1121 Rothwell, Sect. 15
Houston

Earl F. Warren, Phone 919-W,
Alice, Texas

Rex E. Galloup, Phone 6436,
Lubbock, Texas

ORBIT VALVE COMPANY
TULSA, OKLAHOMA

H. C. CLARK has been named California sales manager for Abegg and Reinhold Company, Los Angeles.

Clark has been with the company since 1942, having served in the sales and service departments in the Los Angeles Basin and Coastal District. He formerly was with Crum-Brainard Corporation, Globe Oil Tools Company and Universal Engineering Company.

H. C. Clark

HARVEY D. McLEAN, former manager of the Beaird foundry, has been named assistant to the president of J. B. Beaird Company, Shreveport.

McLean, a graduate of Georgia Tech, has served in operating branches of the company since 1939. Management of the foundry will be taken over by C. N. Wibker, a partner in the firm and manager of the company's Plants 1 and 3.

H. O. McLean

E Award Made

Brad Foote Gear Works, Cicero, Illinois, was awarded the Army-Navy E March 3 for excellence in war production.

EARL D. ALLEN has been transferred from Grayville, Illinois, to Oklahoma City as district foreman for Toronto Pipe Line Company.

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with Split Gland and Seat

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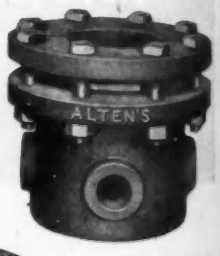

Fig. A-101

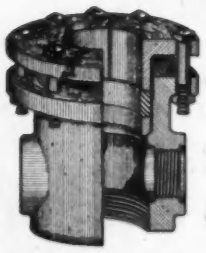

Fig. A-100

See Composite Catalog for complete list or write us for catalog.

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